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ILLINOIS WILD FLOWERS



By JOHN VOSS and
VIRGINIA S. EIFERT



ILLINOIS STATE MUSEUM

Popular Science Series Vol. III

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POPULAR SCIENCE SERIES, VOLUME III

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By
JOHN VOSS
and
VIRGINIA S. EIFERT



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FOREWORD

John Voss died in his native city of Peoria at the age of 53, leaving these photographs of native wild flowers of Illinois as a legacy to the lovers of the out-of-doors throughout the state. He was a thoroughly trained plant ecologist and he carried his scientific knowledge into the woodlands and prairies where the wild flowers grew. By his skill as a photographer he brought back from the forest and the fields the beauties of nature. His collection of floral portraits was incomplete when illness and death came to close his activities.

GEORGE D. FULLER



John Voss, Ph.D.
1895-1948



INTRODUCTION

ILLINOIS WILD FLOWERS is a representative, though not complete, collection of photographs of our native wild flowers, most of which were made by Doctor John Voss. They are arranged according to season, beginning with the opening of the earliest flowers in the year—a period which may be winter one day and spring the next, yet is neither. Then come the abundant flowers of the spring woods and swamps. This is the first peak of abundant bloom; during the blossoming season there are several such peaks. By early June there is a waning. The early flowers are past; they are making seeds, storing food in roots and bulbs; the leaves in many are turning yellow. By June, flowers are coming to fields and roadsides and there are few or none to be found in woods where shade is deep.

During the summer, the majority of flowers bloom in the broad and sunny places. The sandy wastes, the swamps, the uplands, the fields, the roadsides, all have flowers. A peak of bloom comes in mid-summer, then it wanes, then rises to a climax in late August and September when the flowers of the prairie roadsides are at their best. The forests now have their second great burst of bloom as the woodland goldenrods, asters, snakeroots, Joe-pye weed, bellflower, and many others blossom. Then the season wanes, yet blossoming does not entirely cease until the weather is below freezing. The unquenchable chickweed may be found in bloom at any month in the year. The witch hazel blooms in September, October, and November as the last spectacular flower of the year.

The flowers which are found from one end of Illinois to the other cover a distance of about four hundred miles. This stretch of latitude is equivalent to that lying between Portsmouth, New Hampshire, and Portsmouth, Virginia, and the plants vary almost as much as those growing from New Hampshire to Virginia. Illinois has northern wild flowers; it has southern wild flowers; it has flowers from the western plains; flowers native to the east. The combination is unique; no other state can claim the exact mixture and resultant magnificence in wild flowers. Its flowers are as individual and as much a part of the character of Illinois as the trees, cities, farms, and animals of the Prairie State.

"Illinois Wild Flowers" was made possible through the kindness and assistance of Doctor George D. Fuller, whose critical comments and additions to the manuscript are highly valued; Doctor Blanche McAvoy, Illinois State Normal University, for reading and criticizing a portion of the manuscript; Doctor Glen Winterringer, assistant botanist at the Illinois State Museum for help in identifying plants; Herman Eifert for assistance in collecting additional plants to be photographed; and to photographers Russell Carter (on pp. 54, 131, 177, 185, 192, 208, 209, 221, 226, 230); Charles Hodge (on pp. 54, 131, 208); Gilbert Wright (on pp. 228, 233); and V. S. Eifert (on pp. 29, 57, 121, 167, 179, 184, 194, 196, 197, 202, 203, 210, 216, 219, 220, 222, 223, 224, 225, 227, 231, 232, 234, 235, 236) for additions to John Voss's collection to fill gaps in the seasonal sequence. To all of these and more, the author and the Illinois State Museum offer grateful thanks.

Because the flowers in this book appear according to season and time of bloom, a check list of plants found here, arranged according to families in the *Flora of Illinois* by G. N. Jones, is included (pp. 238-245) for those familiar with their scientific names.

VIRGINIA S. EIFERT

Springfield
1 April 1951





SKUNK CABBAGE

Symplocarpus foetidus (L.) Nutt.

Early spring Swamps

Crisp and colorful and ornamental, the skunk cabbage pushes through the spring mud of the swamp and blossoms in the weak sunlight of March. There is wry beauty in this flower and its leaves; it is not the beauty of a rose or a lily, nor of any sweet, sunlit thing. But this is the rhythm of an art feeling expressed in coiled, lettuce-green leaves and ivory midribs, in mottled, purple-red-brown, shell-shaped flowers with no stems to lift them above the mud. Just as there is nothing like the jack-in-the-pulpit, so is there nothing at all like the skunk cabbage before the woods awake to spring.

The skunk cabbage in northern Illinois comes into being often before the redwinged blackbirds have come back to the marsh. Skunk cabbage precedes robins and bluebirds by many days, and is so far ahead of the other spring flowers that it usually is well out of bloom before the spring beauties or the bloodroot blossom.

Skunk cabbage is an Arum. The typical shape is there—the stout spadix enclosed in a cupped sheath. On the spadix are borne the small true flowers which are visited by the earliest insects. The stout, squat “flower” emerges darkly and ruddily from the mud and emits a strange carrion odor. In a few days the folded, pale green, waxen leaves pierce the mud and stand in a tight group beside the flowers. Then as spring advances, the skunk cabbage odor subsides. The flowers shrivel. The leaves grow tall and spread wide on tall petioles, like pale green, glossy burdock leaves. By midsummer the skunk cabbage is known by those knee-high clumps of great caladium-like leaves; known, too, when the leaves are broken, by the strong odor of mustard plaster and onion. It is as staunch an odor as that carrion smell of early spring, or as the perfume of the skunk itself on a summer evening.



SNOW TRILLIUM (Early Wake Robin)

Trillium nivale Riddell

Early spring

Hilly woods, cliffs

It is the first day of spring and it feels like it. Although in March the Illinois landscape in general still has the grey look of winter, the silver maples are in bloom, bees have found them, willows have a ruddy look, the wind actually has a flavor on the tongue, and the voices of the meadowlarks surely are all one needs to acknowledge the reality of spring. They and the small white snow trilliums on a cool limestone cliff above the river.

Snow trilliums are one of the first flowers to bloom, but they usually grow in such high, wild spots, that not many folk who follow the progress of spring ever see them when they bloom. For snow trilliums must have hilly woods; limestone cliffs are favorite haunts. The little trilliums are scattered—some on the cliffs above the Illinois river; in Kickapoo Valley in Peoria county; at Funk's Grove near Bloomington; on a hill near Lake Springfield; at Starved Rock; on the hills along the Mississippi between Hamilton and Nauvoo, all the way north to Galena—trilliums here and there in isolated communities of flowers.

But they are an essential item in the lists of spring.

Snow trilliums seldom grow more than three to six inches high, on smooth, pinkish to green stems. There are three dark green, oblong leaves spreading in a neat triangle at the top of the stem. Extending from the exact center springs a slim flower stalk with one bud. This opens precisely to show three white petals, three green sepals, and six pale yellow stamens. That is the snow trillium.

It blooms in March and early April, sets seeds, and disappears until the following March. Then again, here and there in Illinois, rare little white trilliums poke up through fallen oak leaves on the north sides of rocky hills and show the proper trillium plan-of-three before spring is very far advanced.



SPRING SEDGE

Carex pennsylvanica Lam.

Early spring Woods

As efficiently and as completely as any blossom of the springtime, the inconspicuous flowers of spring sedge open in the sunshine of early April. The sedge is not often noticed; frequently it is passed by as "grass". It has no petals, no beautiful flower as flowers are rated as beautiful, yet the blossoming of the spring sedge marks the beginning of a seasonal era as definite as the change which came between glacial times and the interglacial periods. The coming of spring sedge, often before other flowers bloom, is a sign that winter officially is over and spring now may make its scheduled appearance.

Spring in Illinois is never a settled thing, never a time in which one may put his finger upon a day and say, "Now spring begins." But when the spring sedge blooms in the sandy woods, then at least the blossoming time is inaugurated, and this sets off the period from winter, when bloom is not the accepted thing.

Carex pennsylvanica grows three to eight inches high in a tufted clump of rather stiff, grass-like leaves all springing from the ruddy base. The flowering stalks come up thin and leafless and produce upon their tips a cluster of bright, pale yellow stamens with ruddy scales below, or less ornamental pistillate stalks which make seeds. That is all. This is the beginning of spring. The sedge is in bloom.

Spring sedge is a member of a very extensive family, the Cyperaceae, more than a thousand species of which have been named in the world. Most of them are marsh-growing, wet-soil plants, but many are found in moist woodlands and not a few tolerate dry open woods, among which is the woods-growing spring sedge. It grows in dryish woodlands and on violet banks when spring is on the land.



FRAGRANT SUMAC

Rhus aromatica Ait.

Early spring
Sandy woods

In braided, catkin-like heads, the buds of fragrant sumac stand stiffly erect on the dark brown twigs all winter long. Then when March comes to the sand hills and to the sandy roadsides and woods where the low tangles of fragrant sumac thrive, the stiff buds suddenly loosen, expand, and become little bouquets of bright, lemon-yellow flowers. They are abundant enough to cast a yellow glow upon a landscape only lately rescued from winter. The earliest insects flock to the odorous little flowers. The first mourning cloaks, clicking their dry dark wings through the pallid sunlight in search of something sweet, find it here among the sumac bushes.

Later, the flowers are replaced by clusters of bright red, shiny seeds heavily studded with long white hairs and pale down; the fruits are food for robins and other birds late in summer.

All summer long the leaves, which do not appear until well after the flowers, are dark glossy green. They are aromatic when crushed, as are the stems, and resemble in shape the poison ivy. The sumacs, in fact, are closely kin to poison ivy, but there is no hint of that evil influence in the fragrant sumac. Another very similar species, whose leaves are disagreeably scented when crushed, is the ill-scented sumac.

Fragrant sumac has become much used in plantings around buildings, where its abundant flowers, long before most other plants bloom, make it a welcome addition to city gardens.



DUTCHMAN'S BREECHES

(Boys and Girls. Snowboys)

Dicentra cucullaria (L.) Bernh.

Early spring Woods

It may have all started with that first bloodroot flower on a day when the March sun turned seventy and the wind was southerly. It may have started with snow trilliums on a limestone hill that hadn't seen a beam of direct sunlight since last summer. It may have started in a city park with spring beauties which would bloom and be done long before the mowers clipped them off. But it could not be officially spring until the dutchman's breeches bloomed.

They start up exceedingly early—little curled-over, naked, pinkish stems bent as if to protect the tiny unformed leaves. They grow, stretch, take on greenness, and in an incredibly short time, as one reckons the progress of growth in the year, there are lacy clumps of grey-green leaves among the old brown oak leaves on the forest floor, and each clump in a few days has tall stalks, of crisp, puffy, white flowers. The shape of the dutchman's breeches flowers is their greatest charm, though their faint perfume is delightful and the leaves are truly beautiful. The flowers are as if made in a mold, two halves neatly put together with flaring bottom and wide-spread top, hung tenuously on the thinnest of hair-fine stems which attach them, each at a different slant, to the main stem.

Stems and leaves rise separately from the clusters of pink corm-roots not far beneath the surface of the ground. There is really not much root to account for all those leaves and flowers, just a clump of coral-pink corms no bigger than a hickory nut, held fast by a few short white roots. But in those corms there is enough strength to live through the winter, and as early as the ground permits, to send up stems, foliage, and flowers.



SQUIRREL CORN

Dicentra canadensis (Goldie) Walp.

Early spring Woods

The rich black earth of the old woods slope goes up and up to heights of limestone. The earth is full of limestone chips, with here and there a fragment of an Indian arrowhead where a Hopewellian hunter lost it. The redbuds are in bloom on the great wooded hill, all the way up to the limestone outcroppings, where shadbush clings like an alpine bush to the ledges and flutters its tufts of white bloom in the sunshine.

It is April and the dutchman's breeches are in bloom on all that soft black-earth slope beneath the redbuds and spicebush, beneath the newly leafing buckeyes and the still bare oaks. Wild larkspur is here, purple and pale blue and white; there are yellow violets, blue violets, red trilliums, bloodroot. And there rises an odor as of hyacinths, keen and splendid above the moist odors of the spring woods. Squirrel corn is blossoming there.

At first it blends so well with the dutchman's breeches that one actually may pass them by as all one species. Then, as if the scene comes more sharply into focus, there stand out the stiffer stems of the squirrel corn with their tighter, narrower, pulled flowers, with their longer, more frilly wings below. The leaves seem much the same as those of dutchman's breeches, yet are more compact. And there is that perfume. No dutchman's breeches ever had that fragrance, not that odor-of-hyacinths which rises so strongly from the ivory flowers of the squirrel corn, there on the wooded hill below the limestone ledges.

Squirrel corn has a further difference. Instead of growing from pink corms, it has several yellow corms which look very much like broad, round little grains of yellow Indian corn.



BLUETS. STAR-VIOLET

Houstonia minima Beck

Early spring Open hills

On the dry uplands, on those rolling, gravelly hills where poverty grass denotes a kindred poverty of the soil, the rare little bluets blossom in April. Although other bluets (*Houstonia coerulea*) sometimes are found in northern Illinois and even more commonly northward and eastward, this is the little southwestern species which, further south in Missouri, covers sunny hills and pastures with millions of tiny bright flowers. They are so abundant that the ground is blue with beds of minute and beautiful blossoms.

We have two very similar *Houstonias*, very small, both with deep purple flowers, both called "star-violets", and both are winter annuals. They are *Houstonia minima* and *Houstonia pusilla*. The former has the longer calyx and grows on very dry ground. The Museum has collections from several counties, mostly in the south and as far north as Rock Island. The long-leaved houstonia (*Houstonia longifolia*) often reaches a foot in height, has a many-branched, wiry stem, and small white flowers with pointed, oval petals, and a tube which is longer than the petals. It is found commonly in rocky or gravelly woods in late spring, and often continues to bloom throughout the summer.

Bluets are among the most delicate and charming of the spring flowers in any part of the country. The plant is only one to three inches tall with tiny, bright green, oval leaves placed opposite each other on the thready, weak stems. One flower grows at the tip of each stem; sometimes the stalk forks near the base, but usually it is straight, simple, and one-flowered. The exquisite blossom, a quarter-inch wide, is four-parted and tubular, the tube in this species no longer than the four spreading petals. The flower is bright blue-lavender, clear blue, purple, white, or pale pink, the center marked with four purple-rose dots.



CAROLINA WHITLOW GRASS

Draba reptans (Lam.) Fern.

Early spring Stony fields

More dramatic, perhaps, than the greatest sunflower or the most elegant rose, are these three little plants of whitlow grass. The photograph was staged deliberately to bring out that quality of miniature drama, lighted to emphasize the smallness of the plants, their white flowers set off by the dark and indeterminate background. The small stems, the delicate flowers, the small hairy leaves all are proof that even such may have strength to push through a stony place and grow, and blossom, and make fruit.

Whitlow grass comes early and its blossoming is not announced in the press or talked about with the delight of those finding violets. Few people know when the whitlow grass blooms; few know when its time is over. But in the stony fields and rocky places of Illinois, the Carolina whitlow grass, in tiny majesty, fulfills its annual meeting with the spring.

It comes in March. The little rosettes of small, grey-green, furry leaves remained there all winter among the stones, and now quickly in the damp chill days of March the thin little downy stems push up, perhaps to the enormous height of two or three inches, seldom or never more than that, open their four-petaled white flowers and hastily make seeds in pods reminiscent of radish pods. Whitlow grass and radishes are both in the Mustard family.

Whitlow grass is not an important plant, not an especially beautiful one except for the beauty of any small, perfect thing successfully and efficiently performing its life cycle. It is there as part of the very early spring, often before the more conspicuous wild flowers bloom, and that is enough.



BLOODROOT

Sanguinaria canadensis L.

Early spring Woods In the hill woods above the river the oaks and hickories look down on the new life which has burst over night from the leaf-strewn floor of the forest.

Here are bloodroot flowers sparkling pure white in the sun, flowers which are brief and bright and beautiful, flowers which come early and quickly go. All winter they lay quiescent and frozen beneath the surface of the earth, lay beneath the protecting cover of old oak leaves which year after year soften and crumble and are added to the richness and looseness of the soil. Under this, in tight fat buds, in stout, crisp root-stocks, the bloodroot flowers and leaves in miniature were stored all winter.

Now a day which brings out a hibernating mourning cloak butterfly from behind a shag of hickory bark and wakens the cricket frogs in the marsh sees clumps or masses of bloodroot in bloom.

The plants push up quickly, pale grey-green veiny leaves wrapped around the pale pink stem with the pearly white bud at the top. Quickly, after a spring rain, the stem extends above the curled leaf which unfolds broadly at last. The pearl of a bud, which now is like a white egg on the tip of the juicy stem, opens with eight white petals and a yellow center. A day, and then one by one the white petals drop to the moss and the seed pod begins immediately to form. By summer the bloodroot has completely disappeared, its growth done, food stored in the root, a plant formed in miniature in the bud, ready for winter and next spring.

The root of bloodroot is thick, dark red-brown, gnarled, and when it is cut it exudes a ruddy juice which looks much like thin blood. The upper parts of the plant contain a yellowish juice which shows the bloodroot's kinship with the poppy, to which it is closely related.



SPRING BEAUTY

Claytonia virginica L.

Early spring Woods

Spring beauties are among those abundant spring blossoms which carpet the woods in April. That mass of white flowers is mainly spring beauties with a mixture of trout lilies, toothwort, and anemones—a brief, dancing, delightful throng. It is a transient transformation of the forest floor into a vast flower bed. Of them all, the spring beauties in the carpeting are most lavish in their blossoming.

The thin, pink, watery stems spring from small, hairy brown corms in the ground. The stems and first leaves, red-brown and naked-looking, come up often in February and even then show curled-over stems of flower buds. They seem able to survive the severest weather, and in late March and early April, when the mourning cloak butterflies are out and migrant hermit thrushes are back in the woods, the spring beauties suddenly bloom. They begin with a scattering of exciting white flowers on a sunny south slope. They continue hurriedly on the early mild days with a blanketing of flowers all over the woods.

Each flower has five pinkish or white petals bearing bright red hair-lines, guide lines for insects which come to glean the earliest nectar and at the same time pollinate the flowers. As each flower withers, it bends over on its pliable stem and curls beneath the flower cluster while the seeds form. By June there are no more spring beauty plants in the woods.

They have come up, have blossomed, made their seeds, sent food into the corms, and have disappeared until late next winter when the leaves and flower buds, completely formed, rise again from the lately frozen earth.



WHITE TROUT LILY
(Adder's Tongue. Dog-tooth Violet)
Erythronium albidum Nutt.

**Early spring
Woods**

Long before anything is in bloom in the Illinois oak woods, the close mats of moss and bare ground and leaf-strewn woods floor contain small red spears thrusting into the sunlight. There are hundreds of them, thousands of them, tight and narrow and sharply pointed, poking up from deeply set bulbs in the cold earth of very early springtime. The trout lilies are about to keep appointment with the spring.

With the scant warmth of March and early April, the shoots grow rapidly and in a few days the red color is gone and the shoots have unfurled into pairs of pale green leaves decorated with pale purple-brown mottlings overlaid with a silvery sheen.

There is one bud stalk to a plant, two leaves to a blossoming size plant. There is no wasted greenery, no unnecessary growth of stem or bud. The flower on a damp spring morning uncurls, and three white petals and three white sepals washed with purplish on the backs push backward; the six pale yellow stamens thrust outward, with the three-forked pistil extending still further. Waxed, fragrant, lovely as a miniature Easter lily, standing by thousands through the oak woods in springtime, the trout lily, the adder's tongue, the dog-tooth violet, blossoms briefly and is gone. It is one of the quickest flowers to come into bloom at the close of winter, one of the quickest to make seeds. Before April is over, most of the leaves have turned yellow and have disappeared, and in the whole broad oak woods there may be no sign that trout lilies in a white and perfumed crowd bloomed as soon as the time was right.



YELLOW ADDER'S TONGUE (Fawn Lily)

Erythronium americanum Ker

Early spring Woods

In Illinois oak woods, the white trout lilies bloom early in spring; they are part of the accepted picture of springtime in this part of the middle west. The woods would be strangely lacking in a special quality and flavor if none appeared before April was over. And these are all white.

There are certain rare spots in Illinois, notably in the northern part and here and there in woods further south, where the yellow adder's tongue springs up and blossoms with bright yellow lilies. In the eastern states the yellow kind is the common species; one expects an adder's tongue in New England to be yellow; a white one would be strange to see. But in Illinois the reverse is true.

Six-parted, as the other is, the yellow adder's tongue has a purple-tinged throat and protruding stamens and pistil. There is one flower on the slender smooth stem which springs abruptly from a pair of mottled green leaves. In the yellow species, the leaves usually are broad, glossier, a brighter green with sharper purple mottlings than are found in the white.

Both trout lilies require a long period of growth before they bloom. It takes a seed seven years, usually, to reach blossoming size—seven years while the bulb grows deeper and each year sends up a single leaf. In the sixth year there are two leaves, and in the seventh springtime there come two leaves with a flower bud between them, and the trout lily finally blooms.



PUSSY TOES

Antennaria plantaginifolia (L.) Hook.

April

Dry hills. woods

Pussy toes is a plant of poor soil, often acid, sterile soil where little else will grow. Here on the slopes and covering the cold clay, are the silvery-grey and dark green rosettes of leaves which remain throughout the year. The leaves are long and are tapered to the base, more abruptly to the tip, and are covered with long silky white hairs above and below. Since the underside of the leaves is pure white anyway, the effect is that of a grey-green leaf covered with white silk above and white flannel below.

From the center of the rosette in very early spring there rise several white, silky stalks with alternate leaves and a cluster of soft white flowers at the top. The hairs of the flowers are so dense and the group so compact that one at once is reminded of the resemblance to a tiny kitten's paw. It is no wonder that children long ago, when they visited the woods in early spring in search of the earliest flowers, called this plant "pussy toes". It is a plant which named itself.

Pussy toes is a Composite, part of that complicated and highly efficient group of plants to which belong the sunflowers, the asters, the goldenrods, the dandelions, and many more. Although most of them are large and conspicuous, with yellow and purple predominating in their color scheme, a few, like the species of pussy toes, are small, compact, delicate, and part of the unique flora of a woods in spring. Unlike many of the earliest flowers, the plants of pussy toes remain above ground, dark grey-green now and white below, all through the dry summer, the colorful autumn, and the snows of winter, until spring shall come again.



COMMON DANDELION

Taraxacum officinale Weber

**Early spring
Lawns, fields**

They may be totally unwelcome in lawn or in garden, but on a mild March morning when the sunny south bank is starred with bright yellow dandelions, they are as pleasant a sight as any harbinger of spring. They usually are the first bouquet carried in chubby fists to doting mothers.

The dandelion came over from Europe with folk who knew it back home in the Old Country, where dandelions were planted as part of the garden to provide salads and boiled greens, wine, and tonic, over a long period of time. In America the seeds fluffed away from the hollow, milky-juiced stalks and settled everywhere so that in a short time the dandelion had become naturalized in America.

It grows from a long, deep, white taproot which has great pulling power, which makes it extremely difficult to yank from the ground. The root, leaves, and flower stems are full of an acrid and sticky white milk which exudes wherever the plant is broken or bruised. The leaves grow in a basal rosette almost flat upon the ground, and are cut in jagged teeth.

The hollow flower stalks are downy, pale, and rubbery. Each is topped with a flat, bright green bud which opens to show a whole colony or family of bright yellow flowerets. The central flowers in the head produce pollen and pistils. The stamens come forth first and pollen is carried by insects to other dandelions. Then the pistils push up and receive pollen from other flowers. But if no insects come to fertilize the pistils, they receive pollen from stamens in their own flower head. Even if none of this remains, it is possible for the dandelion to make seeds without being pollinated at all.



MARSH-MARIGOLD (American Cowslip)

Caltha palustris L.

April That night the swampy woods were loud with the throaty
Swamps piping of the spring peepers and the calling of the wood-
 cocks. Everywhere—by dozens, by hundreds, the tiny brown
 frogs hidden in the shallows shrilled their urgent song. Spring! Spring!
 Spring!

Now as the sun comes into the swampy woods, the light shines upon hundreds of gleaming marsh-marigolds—among them the peepers were loud all night. The sun is reflected now from the polished golden petals, strikes highlights in the curve of each flower cup, sparkles on the tight clusters of massed golden stamens in the center of each flower, illuminates the thick, heart-shaped, leathery leaves which stand in tufts with the skunk cabbages in wet places.

Spring takes form among the blossoming marsh-marigolds, as surely here in the northern half of Illinois as it does in the white trout lilies further south, and in all the bright rosettes of dandelions everywhere. The marigolds are like elegant buttercups; stout of stem, thick of leaf, massive of flower, they are the best of the buttercup line, with a special metallic glint on the petals, a special sheen which catches the sunlight until it actually sparkles there in the April swamp.

Cowslips, many people call them. The young shoots are used for greens in some parts of the country. But as a part of the landscape, the marsh-marigolds need both their sparkling name and their sparkling flowers, and their glossy leaves beneath which innumerable small brown frogs wait until dusk to resume their concert of the spring.



HARBINGER-OF-SPRING (Pepper and Salt)

Erigenia bulbosa (Michx.) Nutt.

Early spring Woods, cliffs

Above the cliffs of Starved Rock, high above the Illinois River and the extinct villages of the Kaskaskia in the lowlands, the woods remain much as they have been for many thousands of years. Now it is the end of March. It has been cold and rainy; there have been late snows and winds out of Medicine Hat which ruffled the feathers of the early hermit thrush and quelled the small songs of the first myrtle warblers on their way to the north woods. A few shadbush flowers have come out, but little else shows any evidence that March is at an end and tomorrow April will move into the woods and perform the transfiguration of winter into spring.

Now, as if the hand of April already had touched the cold ground here and there, a host of tiny white flowers have opened in the pale sunshine. Harbinger-of-spring has arrived; now April may come and find the stage already set for Aprillian miracles.

Harbinger-of-spring, a member of the Parsley family, is found not very commonly in Illinois, but in its chosen spots of cool deciduous woods, as at Starved Rock State Park or Funk's Grove, it spreads until the ground for a few short spring days is covered with the delicate plants and their clusters of flowers. The stem is smooth and simple, unbranched. At the top of its imposing length of perhaps two inches, there are two or three compound, finely cut, smooth green leaves; just above them are the little clusters of delicate white flowers.

In midsummer they would be ignored. But in late March and early April when few things have been in bloom since the last of the asters in October, the tiny, scented white flowers of harbinger-of-spring are very welcome. The name *Erigenia* means literally, "born in the spring."



FALSE RUE-ANEMONE

Isopyrum biternatum (Raf.) T. & G.

April Woods

The wooded hillside in April is a flower garden. Its loose rich soil is composed of decayed leafmold made up of generations of dead leaves and sticks; of disintegrated rocks and sand, of water and chemicals all unified by the action of freezing and thawing, raining and drying, sunshine and light breezes. In this loose soil beneath the oaks and pawpaws and wild cherries, the flowers of early spring push through easily and bloom in a hurry after the first call of growth. Most of the earliest grow from roots stored with food, or from bulbs or corms. They are ready to grow when the time is right.

But the small plants of false rue-anemones are unbelievably hardy. They have a thin, fibrous root not far beneath the surface of the ground, not a large enough root to provide much food for the growing plant. The beds of anemones, however, often have green leaves all winter. The small, thin, dark green leaflets on low stems usually stand all winter long without visible growth, and in April send out new leaves and tiny pearl-like buds and dancing white flowers.

The anemone beds then are white with bloom—they are among the most lightly balanced of flowers. The slightest breath of a breeze sets them to quivering, their smooth, thin, compound leaves to fluttering. False rue-anemones are part of that "snow" which covers the springtime woods with a blanket of white.



WOOD ANEMONE (Wind Flower)

Anemone quinquefolia L.

April

Northern woods

Small, intimate, and perfect it stands at the foot of an old tree, a wood anemone in a sandy forest of northern Illinois. Here is the compact, exquisite charm of a small spring flower, efficient in the few leaves it produces, complete and brief in its flowering.

It is a low plant, seldom over six inches high and usually less. It has thin, wiry stems at the top of which is a whorl of three compound, grey-green leaves which are lobed and toothed, and stand out in a triangular pattern below the flower rising in the middle. The flower is five-petaled with a delicate pale yellow cluster of stamens to set off the center.

Wood anemones are not common in Illinois. They belong further north and east. Our common anemones are the false rue anemone, the rue, the prairie, the tall, and the thimble anemones. The little wood anemone, therefore, is an uncommon creature to find. It is most frequently found in sandy woods and in dune forests near Lake Michigan.

This is the flower about which so many poets have written. These are the blossoms of Anemos, the Wind, who sends them as his heralds when the blasts of winter have scarcely given way to the warmer winds of spring. Wind-flowers, they are often called, because their lightly set flowers and leaves nod and dance in any breeze. Long ago in Rome the anemone was picked with an incantation intended to guard the picker from fever. In Asia, where the anemone also grows, it is planted on graves and is called the death flower. But this is spring—this is Illinois—and our anemones, free from superstition, are creatures of wind and pure delight.



GREATER BELLWORT (Wood Merrybells)

Uvularia grandiflora Sm.

April
Woods, hills

Uvularia, the old botanists called it, because, said they, searching for something with which to compare the plant, "The flowers hang, like the uvula or palate."

This seems to be a very prosaic reason for naming a light and airy spring flower with its gold bells twinkling through the woods when April once again is on the land.

From smooth brown sheaths protecting the young shoots, the stems grow rapidly from the rich earth of a moist, ferny hillside. These are smooth and grey-green with parallel veins, and apparently grow with the stem piercing the leaf. This is called a perfoliate leaf and is one of the best ways to identify the bellwort, either in bloom or out of bloom. From the bending, thin stems hang the tight, green-yellow buds which open to form six-parted, bright yellow flowers which last for some time in the spring woods. The flowers finally fall away and there appear tight, three-angled fruits which remain on the stalks all summer long.

The flowers of the bellwort come apart in the plan of three, which marks it a lily. Inside the narrow bell there is a deep, honey-bearing groove, bordered on each side by a thick ridge. Here insects which have come for bellwort nectar must sip, and then back out, scraping off pollen on their wings and backs as they go. Then they carry the pollen to another bellwort, pollination of the flower is accomplished, and the seeds soon will form.



RUE-ANEMONE (Wind Flower)
Anemonella thalictroides (L.) Spach.

April
Woods, hills

On the north slopes of clay hills where the shooting star opens its rocket-like blossoms and brittle ferns uncurl, and the ruby-crowned kinglets sing their minute songs among the shadbush flowers, the rue-anemones come into their fullest beauty. They are part of a vernal interlude which comes between winter and summer, part of the picture which includes delicacy and airiness and exquisite grace in the turn of a stem, the shape of a small leaf, the grace of a flower.

There is more substance to a rue-anemone than there is to a false rue-anemone; that is one way to distinguish them there in the spring woods. There are many other differences, most of them subtle, yet often the two are misnamed by those who come to find flowers in the spring-time of the year.

Rue-anemone has round-petaled flowers of lavender, pink, or white with a delicate, yellow-stamened center. The flowers stand above the whorls of round, three-lobed, dark green leaflets, and the entire plant of many stems rises from a group of fleshy little rootstocks in the ground.

Rue-anemones are truly flowers of the spring winds. Wiry as they are, the stems are unbelievably sturdy in the gusty woods of mid-April. When oaks sustain broken boughs or poplars topple, the rue-anemones simply bend and sway and stand erect again when tornadoes and high winds are past.



HEPATICA (Liverleaf)

Hepatica acutiloba DC.

April Wooded hills

It is a day in March, sunny, bright, but still cool and frosty-feeling on the north slope of a damp, wooded hillside. Now, suddenly, the hepaticas are in bloom. All winter there were the purple-red hepatica leaves from last year, standing above the dead oak leaves, or buried under snow, to mark where the hepatica plants lived in waiting for the first inkling of spring. Unlike so many of the earliest flowers whose plants stand only a little while above the earth while they bloom, make seeds, and send food into the roots, the hepatica is visible all the year round. Curled down at the base of the plant, from which spread the long-stemmed, three-lobed, purplish old leaves, there are grey, silky-furry, new leaves tightly folded and curled together above the flower buds on their silky stems. In an incredibly short time after the ground has thawed and the sun shows more strength than it had in February, the flower stalks extend themselves and the buds open in the weak sunshine. Lavender, pink, white, and all variations of these colors, decorated with a whorl of white stamens in the center, the hepatica flowers are among the most charming to be found in the woods.

John Burroughs said of the hepaticas in his New England woods: "There are many things left for May, but nothing fairer, if as fair, as the first flower, the hepatica. What an individuality it has! No two clusters alike; all shades and sizes. A solitary blue-purple one, fully expanded and rising over the brown leaves or the green moss, its cluster of minute anthers showing like a group of pale stars on its little firmament, is enough to arrest and hold the dulllest eye."



CAROLINA ANEMONE

Anemone caroliniana Walt.

April

Open prairie hills, sands

Marking the eastern-flung boundaries of old post-glacial flood plains and lakes in middle

Illinois are long low ranges of sand hills and wind-chiseled loess bluffs which, through the passage of many centuries of west winds and pouring prairie rains, have been curry-combed into an almost conical shape. They are miniature mountains, the loess bluffs, and the sand hills are great, stabilized dunes whose substance of sand nevertheless may begin to move if the tight covering of vegetation is displayed. But the roots of prairie plants grow deeply and form a heavy mat. As long as they stay, the sand hills stay in place; the loess bluffs, a more stable substance which seldom erodes, holds its top soil as long as the plants are there.

High on the tops of these hills are tiny rosettes of small, compound, ferny leaves. They are thick, sturdy leaves in spite of their small size, and their roots are one with the depths of soil which they require for life. The leaves are silvery-purple and pale green in spring. Then, under the alternately beneficent face of the April sun and the cold, chill rains of a hesitating spring, the curled-down, rose-grey, silky buds finally stand erect and bloom—the Carolina anemones. They are three to ten inches tall, noble little plants which should know alpine heights of timberline country, not the tops of prairie hills. The flower, like most alpine plants, is much larger in proportion to the plant than lowland flowers. The flower may be three inches high and an inch and a half wide, with 15 to 18 narrow, pale pink, lavender, or white petals around a yellow center. This is a western plant whose eastern boundary is reached in Illinois.



SWAMP BUTTERCUP

Ranunculus septentrionalis Poir.

April
Swamps, hillsides

The buttercups are a contradictory tribe. They may be brilliant gold with a sheen like gold leaf, or they may be dull and greenish and small, and

quite unbeautiful in the springtime of the year. Two of the most ornamental of the buttercups are these—the swamp buttercup of the wet places, and the early crowfoot (*Ranunculus fascicularis*) which blooms at about the same time or a little earlier, but chooses clay hillsides as its native haunt.

They have compound leaves and five-petaled, glistening gold flowers with tufted golden centers which sparkle in the April sun. The buttercups start out as neat and compact plants with many short stems and leaves springing in a tuft from the fibrous root. But when April is almost over and still the buttercups put forth bloom, the plants send out runners with new plants on the ends. Outward they stretch and take root wherever they find a place to stop and send in their white little roots. No wonder the buttercups spread themselves so thoroughly and so brilliantly when April comes. With their abundant seeds and their spreading runners, they have two means by which they increase themselves. The swamp buttercup is the more prolific of the two, has rounder, larger, brighter flowers than the early crowfoot. The latter has a more compact plant and much more deeply cut and more compact leaves, and star-shaped flowers with narrow, pale yellow petals. There on the sunny hillside under the oaks the early crowfoot blooms, while down in the marshy place near the pond the ground is golden with swamp buttercups. To both flit the little silvery blue butterflies and the earliest bees of spring.



TANSY MUSTARD

Descurainia brachycarpa (Richards) Schulz.

April

Roadsides, bottomlands

No matter how different their leaves may be, the flowers of the Mustard family, Cruciferae, show their resemblance to each other in the cross-shaped blossoms and bitter, watery juice. It is the shape of the simple little flowers which gives the entire family its botanical name—Cruciferae, the cross-shaped ones.

Tansy mustard and winter cress (*Barbarea vulgaris*) are two which have extremes in leaf patterns; there is very little similarity between them. Tansy mustard grows in dry soil in full sunlight from May through most of July. It has very finely cut leaves which are arranged alternately upon the downy stem. The plant is ferny, rather pretty, not as weedy in appearance as so many of the grosser mustards are. The stem tapers to a loose head of tiny yellow flowers held outward on slim, little stems. As each flower passes out of bloom, the long thin seed pod stands at an angle on the stalk until the whole head is a cluster of seeds.

Winter cress long ago was called the Herb of St. Barbara in Europe where it was used as a very popular spring vegetable. Its stout, rather hollow, juicy stalks and compound, glossy, cress-like leaves are topped with clusters of bright yellow mustard flowers. Winter cress blooms early in low places and along roads where the ditches are moist and frogs are loud on an April evening. Winter cress is a bright bit of sun-gold in a landscape still colored with the drabness of winter.



TOOTHWORT (Crinkleroot. Pepper Root)

Dentaria laciniata Muhl.

April Woods The oak woods above the river are full of song. There may be only a few titmice, two cardinals, a Carolina wren, a chickadee, and four amorous cowbirds, but so early in the season they are a spring symphony to the winter-weary ear.

The oaks stand tall and clean. Their buds already show swelling and a lighter color, but far ahead of them are the buckeye trees which already are in leaf. Spicebush blossoms are brassy gold. Anglering butterflies gather at the running sap left from sapsucker borings on a hickory trunk. Song, color, activity—this is very early spring.

And the woods now are carpeted with flowers. Spring beauties are everywhere; there are trout lilies and dutchman's breeches, bellwort, and yellow and blue violets, red trilliums, wild blue phlox, and new, unrolling ferns. And with this horde of flowers are other blossoms which blend so well with the white of spring beauties as to be almost hidden among them. Here they are, the toothworts, the crinkleroots, in bloom again.

Toothwort has the four white or pinkish petals of the Mustard family, flowers arranged in a loose cluster at the top of the stem which stands above the two or three deeply cut, compound leaves. Taller than the spring beauties and more stiff and decisive, the toothwort is one of the plants which fills a small niche in the complete picture of an Illinois springtime.

The horizontal white rootstock down in the woods earth is edible and pleasantly peppery to the taste, but since to eat it is to destroy the plant, it should be used only for emergency rations.



SHEPHERD'S PURSE

Capsella bursa-pastoris (L.) Medic.

April
Lawns, gardens

In the dooryards of Athens, in the villages of France, in the fields along the Rhine, in the meadows of England, in the cabbage fields of Holland, the shepherd's purse for centuries has come up each year and blossomed and fruited. In Greece, in France, in Germany, in England, in Holland, in most European countries, the young basal leaves of shepherd's purse have been gathered and cooked as greens. Folk for centuries have eaten it with relish.

From its European origin, shepherd's purse has traveled all over the world until it is nearly cosmopolitan. It was taken in shipments of goods and foodstuffs to far corners of the world, seeded itself, went along wherever men went, until today it is an important item in conjunction with man and his habitations, his fields, pastures, and roadsides. When spring comes, the tiny white flowers at the tip of the thin stem are one of the earliest blossoms to come into bloom. To many a city child, the flowers of shepherd's purse and dandelions, picked from some meager lawn or vacant lot, constitute his entire knowledge of the flowering spring.

In themselves, the tiny white flowers are neat little things, white, with four small petals, each flower arranged in dignity upon a thin little stem at angles from the rest of the stem. The stalk begins to bloom from the bottom to the top, and all along the way stand out the seeds when the flowers are gone. The pods are thin, green, sharply heart-shaped, peppery like the fruit of peppergrass.



SHADBUSH (Service Berry. Juneberry)

Amelanchier arborea (Michx.) Fern.

April
Wooded, rocky hills

Now the fleeting touch of spring sets bouquets of blossoms all across the countryside—now bloom the flowering trees which are part of the prairie springtime. It is they which carry bloom aloft, lift it from the ground where the violets and bluebells and buttercups grow, and fling color, light, and perfume against a sun-and-showers sky. They are the intangible spirit of springtime made tangible, translated in terms of thousands of flowers set upon the thousand twigs of shadbush, redbud, dogwood, haw, and crab.

From afar they are unreal and misty, as if a wind might puff them away. They accent the hills and ornament the woodlands, give the meagerest roadside and most barren slope the fairy-tale glamor of a light-opera setting.

In early spring when all about there is only the grey and brown of the sleeping winter woods, the sudden foam-white of the shadbush-bloom comes dramatically to put an end to winter. Shadbush is a slender, graceful, airy little tree with grey bark and long thin twigs. On the twig-tips the buds open before the leaves have more than begun to expand in grey and pink silk in the sunshine, and soon there are large thimbles of white flowers all over the shad trees. A member of the Rose family, the flowers are five petaled and are followed by tiny, long-stemmed, miniature apples. These are the shadberries which are so well liked by robins that few fruits are gathered by human beings. But when they are—service berry pies are the delectable result.



COMMON PAWPAW (Custard-apple)
Asimina triloba (L.) Dunal.

April

Bottomland woods

In April, when spring is everywhere, the pawpaws blossom and are suddenly important in a woods where as yet the leaves have not appeared on anything but the shadbushes and buckeyes. The ground is carpeted with sweet william phlox and anemones, with spring beauties and the purple of the lowland violets; now folk come here to hunt for the succulent spring mushrooms, the spongy brown morels. In the thin April sunshine, the fuzzy black, round buds of the pawpaw trees expand, turn bronzy green and show parts arranged in threes around a tight, hard, round center. Then the flower changes still more until one day the April sunlight shines through silky, translucent, six-parted, purple-red flowers which hang on slender brown twigs. The globular centers of golden-green stamens are open to the bees, and the flowers emit a rich, fruity, almost tropical odor. On the twig-tips, the pale green leaves, folded neatly down their centers, slowly unfold, so that by the time the flowers have shriveled, the leaves are well on their way to covering the trees.

When it is autumn in the Illinois country, the pawpaw fruits are ripe. In the bottomland forests along the Mississippi, the Illinois, and the Sangamon, and the Kankakee, along the Wabash and the Big Muddy and the Cache, the pawpaw fruits are ripe.

It was in these same forests that the Indians knew the richly flavored, custard-filled, ripe pawpaws. They were called *rassimina* by the Illiniwek, to whom this was an important and much sought fruit. *Assiminier*, the French called them, from which *Asimina*, the present botanical name, much later was derived. Pawpaws are edible either baked or raw.



WILD RED PLUM (Wild Goose Plum)

Prunus americana Marsh.

April

Roadsides, thickets

Sweet on the air of an April evening is the fragrance of wild plum trees in bloom. The scent carries everywhere through the woods and along the roadsides, wafts in great bursts of spring perfume reminiscent of all the Aprils that ever were or shall be. There is the sound of cricket frogs jingling at the edge of the pond; the toads are trilling; the first of the whip-poor-wills is back and the dusk is pulsating with its rapid call. It is an evening in April . . . there is the blur of white where the plum trees are in bloom, the softness of new grass under foot, the breath of soft air in the face, and the ineffable fragrance of wild plum blossoms in the nostrils. It is the complete essence of springtime distilled in that one nostalgic fragrance.

The wild plums blossom before there are any leaves on the gnarled black twigs. Now the tight clusters of small buds burst into bloom after a soft April rain, and the trees are dripping with blossoms and perfume and raindrops. A phoebe whirs for a moment to catch an insect among the flowers. Next day when the sun is warm and the breezes blow, there is a soft showering of round white petals to the ground. Day by day the plum blossoms disintegrate until one day the small trees are covered with leaves and the perfume of April is gone for another year.

By August there are oval, coral-red, or yellow-red plums on the trees. Few are perfect; most have small white larvae inside, larvae which were deposited as eggs in the ovaries of the flowers long ago in April. The plums fall, are pecked by robins. The stony seeds are gathered by chipmunks and wood mice and squirrels, who find the nut inside a toothsome morsel on a winter's day.



REDBUD (Judas Tree)

Cercis canadensis L.

April

Woods, thickets

With the delirious scent of wild plum blossoms everywhere along the country roads and along the edges of woods, there comes the blurring of purple-rose color of the redbud trees. Now the small pea-shaped flowers burst from bare black stems which seemed, only a week or so ago, almost as dead as fire-charred wood. Now they are alive; they are covered with beauty and color.

They come together, the wild plum blossoms and the redbuds, and with them, as a perfect complement in color, is the pale golden green of the new willow leaves. These are among the first tangible changes in the landscape - now after an April rain there are those masses of pink, those masses of white, those veilings of pale green where the willows stand. And for a moment in Time it is the most beautiful and most welcome sight in all the world.

Redbud grows almost everywhere in woods in the southern two-thirds of Illinois. It blossoms when the trees are still small, and continues while the gnarled, black-barked trees grow older and older, until that annual burst of pink flowers seems almost incongruous in one so aged. There is a nice gradation of color on the redbuds. When the carmine buds open on the black twigs, they send out thin, pink stems with slim, pointed buds of bright deep pink, deeper on the calyx. Then when the flower opens, it bleaches to a paler pink while the calyx remains almost red, the thin stem lavender-pink. Among the masses of flowers, crisp against the blue April sky, flit the wide-eyed, little ruby-crowned kinglets, sleek and green, on their way to the northwoods to nest.



PRICKLY ASH (Toothache Tree)

Zanthoxylum americanum Mill.

April Woods

It is early spring in the rocky woods, and, there on the hill-slope above the creek, the thorny thickets of prickly ash trees are all in bloom. It is an insignificant but eloquent burst of bloom, the full extent of this tree's annual flowering, but it serves the prickly ash sufficiently well to provide seeds for the coming year. The flowers are short, stamen-filled, greenish or yellowish, shallow bells which burst apparently from the bark of the stems, where the stern prickles jut out. There are no leaves on the prickly ash so early in April when the flowers bloom. Then the tight, deeply set buds open and the compound leaves come forth, and it is late spring, and then summer. All summer the dark green leaves are there on the trees and make a dense shade beneath. Sometimes the leaves are eaten by the hungry orange-dog caterpillar, larva of the giant swallowtail which prefers, of all plants in the land, the leaves of Rue family members for a diet. In the southern states the orange-dog, therefore, eats the leaves of orange, lemon, and grapefruit trees. In the north it chooses those of the prickly ash, which is a member of the same family.

In late summer and autumn the fruits are ripe. These are extremely miniature scarlet "oranges" which split to reveal a shiny black seed. The fleshy fruits when crushed have a strong citrus odor, and when applied to the skin or taken into the mouth, set up a violent burning sensation. This is the reason for its common name of toothache tree, for the counter-irritation set up by the fruits and inner bark of prickly ash is enough to make anyone forget the most severe toothache. Indians and pioneers knew the prickly ash for this beneficent quality.



WILD CHERVIL

Chaerophyllum procumbens (L.) Crantz

April Woods

Where the lowland woods is bisected by the galloping creek, the floor of the woods beneath the elms and Kentucky coffee trees is pale blue with Virginia bluebells all in bloom. There is the white froth of anemones, dutchman's breeches, toothwort, and spring beauties, and the delicate, tiny white flowers of the spreading chervil are like fine spray tossed above the leaves.

Spreading chervil is one of the very early flowers to appear in April. It is a low, weak, juicy-stemmed little plant with compound, parsley-like leaves and small groups of tiny white flowers, each with five petals, in clusters here and there on the plant. Spreading chervil is abundant where it grows; it fills the substratum beneath the bluebells and spice bushes and pawpaw trees; it grows close to the ground and produces its flowers for several weeks, until deep shade appears in the woods and the spring blossoms are gone.

The seeds of spreading chervil come quickly, ripen, are dispersed, and the little plants by and by disappear under the deep shadows of bluegrass and horseweeds. The bluebells are all gone, but the memory of their blueness and the froth of the tiny white flowers of chervil beneath them remains until once again springtime comes to the lowland woods.



MISSOURI GOOSEBERRY

Ribes missouriense Nutt.

April Woods

It is late March. The little stream through the woods is running freely again and the woods-earth is dark and porous after the departure of the snows. The fox sparrows utter throaty flute-notes and ripple-songs, like the sounds of water running under ice. The juncos are tinkling their small songs which mean that it is almost time for juncos and fox sparrows to head north to nest. A hermit thrush, also on its way to northern spruce forests, hops among last year's dead leaves where a scarlet cup mushroom gleams forth like a tanager's feather. On a south slope the spring beauties have opened a few pale flowers, but the great burst of early spring bloom is not yet here.

But the look of spring is all through the hilly woods. The wild gooseberry bushes are in leaf. They are smooth, rounded mounds of pale green and the leaves are still so young they are folded and pleated, delicate and soft, pretty as flowers and with a pervasive fragrance which is everywhere in these woods.

A month later the gooseberry bushes have full-grown leaves and the flowers are in bloom. The scent of gooseberry blossoms is even stronger through the woods than it was when the leaves were perfumed. Now the flowers hang in small clusters all over the bushes, spring from the axils of the leaves and the new green stems. The flowers are almost fuchsia-like in shape, pale green and white, with tightly recurved sepals of the bell-shaped calyx and a tight, bell-shaped corolla inside. From this extend the dramatically long, tight group of white stamens and the pistil. It is indeed a dramatic little flower—small, but so delicately exaggerated that in its waxen perfection it is among the most beautiful in the spring-time woods.



WILD BLACK CURRANT

Ribes americanum Mill.

April In the rich, alluvial black soil of lowland woods, the wild
Swamps black currant in April hangs out its chains of bright yellow
bells with their pleasant fragrance of cloves. It is one of those
special sights of spring—the wild currant bush with its new, perfect,
heart-shaped, pleated young leaves and its drooping racemes of scented,
bright gold flowers.

The blossoms are bell-shaped with five recurving petal divisions and stiff yellow and white stamens and pistil within. The flowers are placed alternately along the thin, weak, downy stem which springs from the axils of the secondary new branches and leaf-axils.

The fruits of wild black currant are purplish black and edible, though they are far more tasty when cooked than when they are eaten raw. They are smooth and thick-skinned, hang in the same clusters as the flowers did—from gold to purple, it is just a matter of a few weeks from one to the other. The fruits when crushed have some of that faint odor of skunk which is inexplicably found in certain other members of the genus *Ribes*.

The Arabs knew currants. It was they who gave them the name of *Ribes*, which was derived from an Arabic word meaning "fruit with acid juice".



GOLDENSEAL (Orange Root. Yellow Puccoon)

Hydrastis canadensis L.

April Woods

Long ago in the days of the French explorers, LaSalle built a fort above the Illinois River near the Peoria Indian village, and named it Fort Creve Coeur because of the heartbreak he found there. And there in the virgin forest of the Illinois country, up there where the hill sheered abruptly away to descend to the river and where the fort looked far across the Illinois wilderness, the plants called golden seal blossomed in April.

Goldenseal long ago was used as a tonic; the yellow roots were medicinal and were known in the earliest days of the pioneers as a medicine to dig in spring. Perhaps LaSalle's Frenchmen knew it; or perhaps they knew nothing of it. The goldenseal blossomed and spread its broad, veiny leaves, and the years went by, one by one, in the forests of the Illini. Fort Creve Coeur fell into ruin. LaSalle died in the far-away Texas country. The Indians were pushed further and further away into the west and Illinois became a state, became populated by people from the south and the east. The forests were cut, but many woodlands remained, and there each spring the goldenseal came up and bloomed and spread its veiny leaves. It is there today. In the woods near the site of the old Fort Creve Coeur the photographer came upon the goldenseal.

Goldenseal rises from a thick yellow rootstock and has a stout hairy stem bearing two palmately lobed leaves near the summit. The stem terminates in a single flower which has no petals but is a simple whorl of white stamens which last but a short time. The fruit is like a deep red raspberry. Goldenseal formerly was found throughout the state, but has been almost exterminated by drug-plant collectors.



WHITE BANEBERRY (Doll's Eyes)

Actaea alba (L.) Mill.

April Woods In a creamy plume of flowers composed entirely of a whorl of white stamens around a pistil disk, the white baneberry in April blooms in the deep hilly woods of Illinois.

The stamens actually are slender petals transformed at the tips into stamens. The whole flower cluster is a creamy white plume standing tall on a stiff stem above the leafy plant. The leaves are dark green, toothed and compound, rather like elderberry leaves, so that Linnaeus in naming the baneberry called it *Actaea* which is the Greek name for the elder.

Baneberry blooms in April. Then in the growing leafiness of the woods the plant is inconspicuous, though it is large. On the end of the flower stalk forms a cluster of green berries which, as late summer comes into the woods, are transformed into something unique. The stems on which the berries grow are carmine and very stout, almost as thick as the berries themselves. And the oval fruits are china-white with a purple spot at the end. They are often called doll's eyes by children who find them there, for the resemblance to old-fashioned china dolls' eyes is most striking. The well-spaced cluster of white fruits on red stems is one of the ornamental sights of the late summer woods. The berries, however, are poisonous; they have a toxic and dizzying quality when eaten—hence the old name of baneberry—and should be avoided as food. But as something beautiful, something startlingly white in the dark woods, the white baneberry is remarkable.

Red baneberry (*Actaea rubra*) has a similar flower cluster but the fruiting stalk bears brilliant scarlet, shining berries in exact contrast to those of the white, and the leaves are a darker, glossier green.



WILD GINGER

Asarum reflexum Bickn.

April Woods A brown thrasher sings, the air is like wine, the wild crab apples are blossoming, and the wild ginger flowers have opened secretly and with no ado beneath the heart-shaped leaves. All that is visible from above is the mosaic of dull satiny, heart-shaped leaves which stretch in a broad area through the hilly woods.

But to the wood thrush poking among the leaves, or to the Polygyra snail ambling past on a moist, dewy spring morning, the wild ginger presents a different appearance. Under each pair of leaves—there are two leaves to each plant—there is a strange maroon and white flower lying upon or almost upon the ground. The outside of the flower is furry, as are the stems and undersides of the leaves. Three thinly tapering divisions of the flower bend outward. Inside, the flower is marked geometrically and artistically with black to form a pattern of six points around the six stamens and the stout pistil. Hidden though it is, the ginger is an ornamental flower.

The wild ginger grows from a creeping rootstock which extends itself, branching, in all directions, so that a colony soon forms and becomes a mat upon the ground. Hardly anything else will grow in the ginger beds because of the dense shade made by the leaves and the monopoly of the roots in the ground.

The rootstocks are pungent and edible. At one time in America they were dried and candied, like Malayan ginger, with a flavor and spiciness much like the real thing. Even when eaten raw, the ginger root bites the tongue with true gingery pungency.



COMANDRA (Bastard Toadflax)

Comandra umbellata (L.) Nutt.

April A small, low plant, the comandra blossoms now in
Woods, prairies April on the dry soil of a hogback ridge. It is an inconspicuous plant, not especially beautiful with its greenish-white flowers, but neat and well arranged with alternately oval, grey-green leaves. The comandra, however, is part of its environment, one of the plants which will grow in the dry clay of the hogback ridge, as well as in sandy places and sometimes out on the level prairie.

It is a member of the Sandalwood family which is largely tropical except for three genera, the southern nestronia, the mountain pyrolaria or buffalo nut, and the comandra, low and small and insignificant in the springtime.

Comandra is firmly fixed in its environment. It cannot be transplanted because its roots are parasitic on the roots of trees and shrubs where it grows—and there it stays. It stays just as firmly attached to its host as the larger plant, the sandalwood tree itself, far away in Polynesian forests, is attached to its host plant.

Thus, remotely but vividly, the plants of the world bind the world together in a mysterious network of associations and connections which only superficially are understood. The comandra on an Illinois hill, the Sandalwood in Malaya, in Hawaii, in Polynesia, in Australia, both of them members of the same strange family.



WILD BLUE PHLOX (Sweet William)

Phlox divaricata L.

April - May Woods Wild blue phlox is in bloom and it is April again. That is the remarkable thing about springtime, that jig-saw puzzle intricately put together from all the widely scattered pieces of itself. Take the dull face of late winter and add a bit of green that looks like new grass, and add a plump robin running importantly across it, and there is the beginning of the puzzle called spring.

The pieces of the Illinois springtime are scattered widely from Illinois to the Argentine, from the tops of the trees and the open sky to the lowest grasp of root in the earth. Somehow, piece by piece, from far places or from close at hand, they come back or they spring from the ground, or they grow, and magically they all fit together. Each bird which returns from the south adds one more bit to the picture: each wild flower has its place. And if the spring beauties forgot to bloom, or if a blight hit all the wild blue phlox, how empty would be the April woods, how imperfect the pattern of the spring.

The wild blue phlox or sweet william is spread lavishly through all the oak woods of Illinois, in uplands and in bottomlands, along country roads where once there were woods, and adapts itself agreeably to use in gardens where it usually blooms when the pink tulips and late daffodils are at their best.

Wild blue phlox is a tubular flower with five spreading, oblong petals which vary from pink-lavender through many shades of pale lavender and blue-violet, to pure white. The flowers appear in clusters at the tips of the slender stems, upon which are arranged several pairs of clasping, dull green leaves. The basal leaves of the blue phlox usually remain green and above ground throughout the year.



SAND PHLOX (Cleft Phlox)

Phlox bifida Beck.

April - May Like crisp embroidery or delicate lace, the flowers of sand
Cliffs, sands phlox are draped over sandy slopes, in sandy woods, along
 roads, on sandstone cliffs. The slender root sturdily parts
 a rock to enter and grow; or extends deeply into the sand where moisture
 lurks. The plants themselves are insignificant. Before the trim, pointed
 buds open, there is little that attracts the attention to that sunny sand
 bank where the black jack oaks and red oaks grow, or to the sandstone
 cliff above the river. But on a sunny morning in late April or in early
 May, the bank is suddenly exciting with flowers. The sand phlox is in
 bloom and the sand bank is an enchanted spot.

The flowers are white, pale porcelain blue, or faintly lavender-pink, though the blues and whites predominate. The flowers are five-pointed stars whose petals are so deeply cleft that they appear to be ten petals instead of five. The center of the flower is the mouth of a short tube, in which are pale yellow stamens and the pistil. The sand phlox spreads in a mat over the ground or rocks, sends long, thin stems trailing, and everywhere puts out those starry blossoms in the spring sunshine. Then they are finished. A little later, the inconspicuous plants are seldom noticed by those who walk there, and not until spring will the sand phlox again be beautiful enough to stop passing cars or invite the exclamations of delight of a passing hiker.



TWINLEAF

Jeffersonia diphylla (L.) Pers.

April Woods

Thomas Jefferson was a man who was deeply interested in new ideas, new lands, new plants. In his estate at Monticello he planted flowers and trees from far places and sent for specimens from the hinterlands of the then unexplored America. He rode through the Shenandoahs and was, perhaps, more conscious of the plant life growing there than were most men of his time. And so it was that a new little American wild flower was named *Jeffersonia* in his honor. Few American presidents have been honored in this manner. There is the *Washingtonia* palm, and the little *Jeffersonia*—perhaps these are all. This is a singularly fitting tribute, for both men were intensely interested in the plants of America.

Very likely neither saw the *Jeffersonia*, the twinleaf, because it grows from northern New York across the upper states to Wisconsin and Iowa, and southward a little way so that northern Illinois is included in the range. Now in mid-April there comes a group of oddly shaped leaves, much like a pair of kidneys suspended from the middle of the inner sides to a curving stem. Below the leaves is a white flower with eight oblong petals around a yellow center. Superficially it looks surprisingly like bloodroot. But bloodroot never had leaves like these, and the flower, though much like it, is smaller and has shorter, less ethereal and transient petals than the delicate bloodroot. The latter has yellow juice in the stems and red juice in the root, and these the twinleaf has not . . . twinleaf, Thomas Jefferson's flower.



WILD LARKSPUR

Delphinium tricorne Michx.

April - May Ornamental as a garden flower, bright as the brightest
Grassy woods purple or delicately lavender or chastely white, the wild larkspur grows in the blue-grass woods, in the hilly limestone woods, or along roads where once there were woods. Wild larkspur is one of the most brilliant and arresting of all the Illinois spring flowers.

In woods where the larkspur blooms there flutter the *Papilio* butterflies, the tiger swallowtail and the angular zebra swallowtail. The zebras lay their eggs on the new pawpaw leaves; the tigers choose sassafras. The bright black and silver wings of the zebra swallowtails come flitting in jagged flight through the sunlight of the larkspur woods where the pawpaws grow, and the tigers, bright canary yellow and black, fly apparently in aimless fashion through the trees and over the flowers. The swallowtails both come to the wild larkspur flowers, and in so doing present a splendid contrast in color and line. The larkspur flowers with their fuzzy centers and long spurs offer a somewhat difficult perch for butterflies, so that they must cling with wings in motion while the long proboscis probes deeply into the trumpets for nectar.

Bees, however, are believed to be the actual pollinizers of the larkspur—big black and yellow bumblebees making the whole flower stalk shake while they sip nectar from bright purple blossoms. Larkspurs are unable to complete fertilization in themselves without the aid of the bees.



PRAIRIE WAKE ROBIN
(Erect Red Trillium. Bloody Noses)
Trillium recurvatum Beck

April Woods To many a child in the Illinois country, the prairie wake robin means spring. To many a person, this is the only wild trillium that is known, for the white trilliums of several species are not commonly scattered over the whole state. In the middle part of Illinois, where the oak woods predominate as islands in the once-prairie cornfields and acres of soybeans, the prairie wake robin stands somberly erect on an April day.

This trillium has the usual trillium arrangement of three spreading leaves; they are often mottled, much in the manner of the adder's tongues, but with a less silvery sheen. The petals of the flower are maroon and stiff, arched above the six tight black stamens which curve over the pistil. Three stiff sepals bend crisply down until they clasp around the maroon stem. This is the red trillium, a grim and almost puritanical-looking flower, but it is nevertheless well known to country children. The children of New Salem must have known it in their woods; so did the children of Bishop Hill and Nauvoo and Kaskaskia and Cahokia and Sangamo Town—children of those long-gone pioneer communities may have picked bouquets of spring flowers and added to them the lank stems of the prairie wake robin.

It is as much a part of the oak woods in April as the spring beauties, the dutchman's breeches, and the yellow violets. These come together, bloom together, vanish together when May comes and June approaches, when the woods prepare for the coming of the shadowy summer.



GREAT WHITE TRILLIUM

(Large-flowered Wake Robin)

Trillium grandiflorum (Michx.) Salisb.

April - May

Northern woods

The April sun which moves in shafts of misty light early in the cool bright morning shines upon the faces of great white trilliums blossoming in the woods. They are there by dozens, singly, in colonies, in hordes. Huge, clean-cut, with splendid three-parted simplicity which is their greatest charm, the rare white trilliums gleam in the Illinois woods which still support them. Further north in wilder country they still are common; in Illinois they seem to be limited to the northern third of the state and seldom are found in numbers, pure and white and tall, in the fragrant April woods.

The great white trillium is the largest of the family. Yet of them all, the great white has more variations and deformities in blossoming than any others. Few other plants, in fact, present so many variations of a single theme. A trillium should be arranged according to the plan of three, with three petals, no more, and three leaves, and no more. But there may be one with four petals and four leaves, one with two petals and four leaves, one with five petals, six petals, eight petals, even twelve, with any number of leaves, or the prescribed number of three. Although these monstrosities are beautiful with their pure white petals, they lose that pristine charm of the true and undeformed white trillium which, as many religious folk say, expresses the beauty of the trinity.

Trilliums in the woods—the spring lives and grows and blossoms and sings and moves all about them.



NODDING TRILLIUM

Trillium gleasoni Fern.

April - May
Hilly woods

The leaves are large and broad, bright green and veiny. Three of them extend at angles from the top of the tall, smooth stem, and from the middle curves a flower stem with a white flower on it. The petals roll tightly back, and the flower bends so that usually it hangs below the level of the leaves. This is the nodding trillium in the Illinois woods, the tallest of its tribe.

It grows in rich, shady woodlands; the richer the woods, the bigger the plants. Calhoun County produces some which grow almost three feet high with flowers five inches in diameter, but this is not the general rule. It is seldom, however, a small plant. Nobly, in its classic plan of three, it ornaments the woods where its more elegant kin, the great white trillium, does not grow.

It is late April or May when the nodding trillium blooms. The oven-bird has come up from the southern jungles and, on its way to Wisconsin forests, pauses a while in an Illinois woods. On long pink legs the oven-bird walks, teetering its tail, beneath the mayapple umbrellas where the cupped white waxen flowers open; pokes among the little bright green brittle ferns; pauses a moment to pick an insect from a yellow violet leaf. The oven-bird looks like a small thrush, but has a crown striped with red, black, and buff, and walks, wide-eyed and cautiously, in the underpinning of the woods. It walks under the broadly expanded leaves of nodding trilliums, then flies to a twig of an oak whose new leaves are pink and velvety, and utters a wild song flung in rising crescendoes to the woods, a spontaneous expression of the delight of spring-time. This is spring. Here are birds. And nodding trilliums once again are in full bloom.



SHOWY ORCHIS

Orchis spectabilis L.

April - May
Hilly woods

The brittle ferns are there, and the Christmas ferns. There is a clump or two of ebony spleenwort on the slope above the foxes' path, and a woodland full of newly leafing oaks and hickories and black cherries all around it. And there, set apart with that elegant, aloof look of orchids, is the showy orchis in splendid clumps of glossy oval leaves and pick and white flowers.

They are never common. But the showy orchis is more common in many Illinois woods than are most of the other orchids, and it is beautiful enough to be known instantly as a member of that family.

The stout stem is set with hooded blossoms. The hood is lavender-rose and the broad, extended lip is crinkled, a pure, sparkling white. The unfurled buds, perhaps, are even finer than the open flowers. There is a delicate fragrance suggesting that of the cultivated *Cattleya*, but with an element of wildness and a faintness of scent which makes it part of the Illinois woods.

In this fragrance and in this flower is the culmination of all that is fragrant and colorful and compact of the springtime. In the picture are warblers singing in the trees, and a towhee poking about in the leaves near the orchid. In it is the multiple scent of spring, of damp earth, blossoming plum trees, and wild crab apple flowers, the perfume which is distilled in a night in the woods, and in the new odors of dawn. All these things are in the wild orchis in the woods, in the clusters of leaves and the stems with their pink and white flowers which express in their transient blossoming the brief rarity of spring.



BISHOP'S-CAP

Mitella diphylla L.

**April - May
Woods**

"Diphylla", two leaved—that is the bishop's-cap, a simple spring plant whose thin stem bears two leaves which almost clasp about half way up the stalk. It is a stalk set with snowflakes. No other flower, perhaps, is patterned so much like a snowflake, nor holds that resemblance consistently until the flowers are done and the tiny seed pods open to show a pair of glistening black seeds.

Bishop's-cap lacks one or two qualities of proper snowflakes. In number, the flower divisions are five instead of the crystalline six; it is not as fragile and fleeting as a snowflake, though a prematurely hot day in spring will send it quickly out of bloom.

The flower is just a cupped calyx from which extend five petals which are so deeply and finely cut that they are thready and snowflake-like without any exaggeration of simile. Perhaps no other Illinois flower has petals of so little substance.

Bishop's-cap is about six to eight inches tall. It grows in narrow, cool ravines where the soil is deep with old leaf-mold and perpetual moisture, and in oak woods with cool northern slopes. It blooms in late April and is a member of the varied Saxifrage family.



AMERICAN BLADDER NUT

Staphylea trifolia L.

April - May

River hills, bottomlands

On the steep, rocky hillside above the river, there where the spice bush is in bloom in a sparkle of gold and the rose-breasted grosbeak sings over and over again in the pawpaw tree, there are low trees full of dangling clusters of small white bells. The flowers are compact, tinged with green. They have protruding stamens and pistils, pleasant little flowers held in well arranged groups which spring on long stems from the axils of the leaves. Bladdernut is in bloom.

The American bladdernut is a tall shrub which grows into the proportions of a small tree. The upper twigs are green with long whitish stripes. The leaves are compound, in threes, finely toothed, with parallel veins; in groups of two or three, or more, they spring from the woody stems with the flower stems between.

Soon after the flowers have fallen to the April earth, the seeds begin to form, and these are among the strangest in the Illinois woods. Here are tight, compact, three-parted, inflated balloons. The bladder-pods at first are green and thin-skinned but later in the summer they turn brown. In Europe the seeds of bladdernut are used as a substitute for pistachio nuts; it is said that the American bladdernut seeds are of similar flavor. They are extremely hard, however, and difficult to crack.

Bladdernut is found in deep woods, especially on the shaded hillsides above rivers and creeks, where cliffs rear high and the earth is black and stony beneath tall trees.



SPRING CRESS (Bitter Cress)

Cardamine bulbosa (Schreb.) BSP.

April - May
Swamps, shores

Where the springs run out of the sandy hillside—where the watercress beds are green and lush in the clear, cold spring water, and the wild iris grows where the stream widens into a marsh—there are airy white flowers held delicately on thin stems. The spring cress is in bloom.

Four-petaled like radish flowers, the blossoms are held on graceful stalks above the neat, lobed leaves which all grow from a bulbous base in the moist, sandy, woods soil.

The little silvery blue butterflies, which come to sip moisture along the spring's flow, come flitting by and pause on the white flowers of the cress, sip a moment, and are off again. A Bewick's wren, twitching its long tail here and there in a most reckless abandon, comes hopping past, muttering to itself, and cocks an eye up at the flowers, thrusts out a long curved beak and picks off a lady beetle. A box turtle pauses for a long nap close to the bed of spring cress, then in leisure awakens and reaches out a slow head to take a bite of cress leaves.

Springtime goes on all about the cress flowers. Sun and moon and night and day, the coming of migrant birds and their departure to the north, the crying of whip-poor-wills at twilight and the crying of killdeers out on the mud of the marsh all day and all night. And when the white petals of the spring cress finally fall to the ground and the seeds form on the stalks, then indeed the spring is past and summer has come into the woods.



SMALL-FLOWERED BUTTERCUP

Ranunculus abortivus L.

April - May
Lowlands, woods

In its members, the crowfoot family is many and varied. They range from the little green mouse-tail to the anemones, meadow rues, hepaticas, marsh marigolds, columbines, delphiniums, and buttercups, as well as a number of others. There is little obvious similarity in the flowers; one wonders how the systematic botanists contrived to group all of these plants in the all-inclusive group of the Ranunculaceae, the Crowfoot family. It is believed to be the most primitive group of the flowering plants.

The genus *Ranunculus* was named for *Rana*, the frog, because of the affinity of certain members to grow in wet places. The buttercups themselves are an ornamental lot, but there are some other crowfoots which are quite lacking in individual charm. Aside from their interest as plants with their own unique characteristics and manner of growth, one finds little to admire in the small-flowered buttercup.

There they are, the lesser ones, the poor relations in a tribe noteworthy for its beautiful blossoms. The small-flowered buttercup usually has a rosette of leaves which live above ground through the winter. They are broadly oval and scalloped, shiny, and bright green; on a winter day they look very much like too-early violet leaves. But by early April the tuft of leaves has sent up a stout, juicy stalk bearing leaves along it and branches on which are small, brassy-yellow flowers. They are about a fourth-inch wide, star-shaped, with a ball-like center which later becomes seeds.



NARROW-LEAVED PUCCOON

Lithospermum angustifolium Michx.

April - May
Sunny hills, prairies

They put a bright spot of color in the woods in spring—bright orange on the clay slope, red-gold among the limestone pebbles, orange-yellow on the cliff; the puccoon is in bloom. Now in May when in the woods paler colors predominate and the stronger colors of late summer have not yet made their appearance, puccoon flowers set a blaze of pure pigment on the hillslope.

The puccoons inhabit prairies or woods. The hoary puccoon (*Lithospermum canescens*) is found with wild hyacinth in the prairie soil remaining along railroads or highways. The plants grow from an exceedingly long, straight taproot which goes deeply into the ground. Just below the surface the individual stems form and stand erect as a plant of a dozen or more stalks all topped with clusters of bright yellow-orange flowers. They are tubular and spread in five parts to glitter in the sunlight.

On the gravelly hill and the dry ridges there blossoms now the narrow-leaved puccoon which perhaps is the most beautiful of all the family. The flowers are crinkled and frilled like some ornamental little petunia. They are pale yellow and are produced in clusters at the summit of the short stem. The throat of the flower is crested so that few insects except those with long tongues may penetrate to the nectar. Narrow-leaved puccoon is a prairie plant which is found over most of the broad, sunswept, wind-cleaned land from Ontario to Indiana, Illinois, Kansas, and Texas, as well as westward into British Columbia, Utah, and Arizona. Landscapes much different from that of Illinois — dry buttes, broad prairies where the lark buntings nest, the northern camass country, the paint lands of the west—all know the bright little yellow blossoms of the puccoon.



YELLOW STAR GRASS

Hypoxis hirsuta (L.) Coville

April - May

Dry wooded hills

There is a charm in little things which is all out of proportion to their size and importance in the world. In contrast to the lush weediness of the horseweed which grows fourteen feet tall in a good season and is unadmired, the little yellow star grass stands as a perfect small plant which grows no taller than three inches or so, and is just as efficient in blooming and living as is the more tremendous horseweed.

The yellow star grass is an Amaryllis. From a small hairy corn rather deeply set in the heavy clay of an oak hillside, the tiny Amaryllis in April thrusts forth three to six yellow-green, grass-like, hairy leaves and a few stalks with clusters of buds. Then when the rose-breasted grosbeaks are back and the orioles flash in the cherry trees beneath the sunshine of an April sky, the yellow star grass on a sunny morning opens its flowers. They are as brilliant as marsh marigolds, as yellow as buttercups, as golden as dandelions. They are perfect little lilies with six oval petals and upstanding stamens, and they seldom last more than a day. The time of blooming of the yellow star grass is brief but bright. They star the slopes with sunshine. Then they are gone and the leaves and seed stalks are inconspicuous in the heavy growth of summer. But inconspicuous or not, the leaves produce plant food which is stored in the corn, and then they quietly disappear and nothing more is seen of the yellow star grass until the following April.



GROUND-IVY (Gill-Over-the-Ground)

Glechoma heterophylla Waldst. & Kit.

April - June
Gardens, woods

A creeping catnip—this is ground-ivy or gill-over-the-ground, a common ground cover which, in this capacity, may be very useful or may be reviled as a destroyer of grass. However, ground-ivy almost always grows in the deep shade beneath trees where grass is seldom successful, and may be used effectively as a ground cover when other greenery fails to thrive.

The leaves of ground-ivy are round and scalloped; they are sensitive to frost and vanish early in autumn. Very early next spring, however, the new leaves and stems come forth, and there are innumerable pairs of bright purple, tubular flowers in the axils of the glossy leaves. Ground-ivy often appears even before the flowers of those other early spring blossoms, the spring beauties and violets, and sometimes is the first flower to be found in bloom. When the flowers are produced in abundance, the effect of a bed of ground-ivy is that of a carpet of purple.

Ground-ivy is highly aromatic when bruised and contains a bitter, volatile oil which is poisonous to cattle who chance to eat either the green or dried leaves mixed in hay and fodder. The plant, however, is so aromatic that the majority of animals instinctively avoid it; and, in consequence, few are ever poisoned by eating it.



FLOWERING DOGWOOD

Cornus florida L.

April - May

Rocky woods, river hills

When the shadbush and redbud flowers are all but past, and the fragile petals of the wild plums have been scattered to the winds, the dogwood flowers spread whitely beneath the sun. Since spring first arrived, the dogwood bracts have been expanding. All winter long on the small trees there were round buds of pale grey tipped with purplish. Then as the first hint of spring came and the sunshine grew warmer, when the wind at last was in the south, and the cardinals were singing, the dogwood bracts curving around each bud slowly opened. Like the immature wings of a newly emerged moth, which expand to full size in a few minutes, the dogwood bracts now, day after day, acquire more of the true character of flowers.

At first the flowers are wrinkled and grey-lavender, half an inch long. Then they bleach to green-white or yellowish white until, on a magnificent morning in late April or May, when birds are singing their great springtime concert, the sun sparkles upon the glistening white butterfly flowers of the dogwood.

The four bracts are now white. They form what appears to be a four-petaled flower, but the true flowers themselves are tiny, tubular, and greenish yellow in a cluster in the center of the bracts. But the technicalities of whether the dogwood's spring performance deals in bracts or in true flowers matter very little on a bright spring day when the hills are splashed with dogwood snow.

Dogwood follows the limestone and sandstone hills along the rivers southward through Illinois, south through the southern hills and down the Mississippi into the far south.



VIRGINIA BLUEBELLS (Cowslips)

Mertensia virginica (L.) Pers.

April - May
Hilly woods, bottomlands

It is May, next door to summer, and sometimes summer itself makes its appearance in Illinois before May is half done. Hot

weather hurries the migrating birds into the north, speeds leaf-growth on the trees, hastens the spring flowers into oblivion.

Yet the Illinois May can be slow and cool. It may be a period of soft rains in which the blur of wild crab apple flowers is like wet pink silk, full of the flitting of migrant warblers and the piping of white-throated sparrows among the leaves.

May is all these things. And it is the masses of bluebells in the alluvial bottomland woods, there where the creek or the river each year overflows and leaves rich black earth when the water recedes again. Now on a May morning the bluebells in the bottoms are crisp and bright blue, fluted bells with slim tubes and flaring skirts. The buds are apple-blossom pink; the expanding flowers are purple-rose; then they are that incomparable blue which no other flower in Illinois can quite approach. The pale green, thin leaves below these masses of dangling bells are oval and juicy on the stout, watery stems supporting masses of delectable flowers.

Bluebells grow from black, gnarled brittle roots set deeply in the heavy soil, as well as in the looser soil of wooded hills. The young plants in spring are dull purple; the tiny clusters of pale blue and pink buds come up with the leaves. The plants quickly grow, blossom, then the leaves turn yellow, the plants shrivel, retreat into the roots, and by summer there is no evidence, among the nettle jungle in the bottoms, of all those spring bluebells so lately gone away.



MAYAPPLE (Mandrake)

Podophyllum peltatum L.

April - May
Oak woods.
Cut-over pastures

When the conical white shoot starts forth from the long root of the mayapple and in April emerges with thin white skin, the mayapple is on its way through the first of a number of changes in appearance before it blooms. When the sheath splits, the plant pushes upward. A blossoming plant is known even now by the small greenish-white bud which is perched at the top of the stem, with the two bronzy leaves neatly rolled and wrapped below it. Younger plants which will not bloom have only one leaf. In a few days of mild moist weather, the leaves begin to unfurl, so that the young mayapple plants stand broad-spread in the sun. The firm white stem rapidly grows upward to its appointed height of about a foot. Mayapples do not grow singly. They are colonial and often cover broad areas in the woods.

There in the pleasant May morning the mayapple flower opens a broad, white, cupped, waxen blossom which has a superficial quality of the dove orchid flower, though it actually is not at all like it. There are curving thick petals around the cluster of golden stamens and the stout green, barrel-shaped pistil.

For a week or so the mayapple colonies are all in bloom. Then as May advances, the petals fall and the ripened pistil expands greenly and unobtrusively all summer long. The mayapple leaves grow leathery and sometimes ragged; they turn yellow and brown and most of them disappear by late summer. By then the fruit has grown to the shape and size of a small lemon and is pale yellow, full of silvery, edible pulp. The roots, stems, and leaves, however are said to be poisonous.



WILD CRABAPPLE

Malus ioensis (Wood) Britt.

April - May
Roadsides, woods

April rain drips from the purple-black twigs of the wild crab apple trees, pearls the pink buds and the crisp, spicy flowers, mats the petals, studs the new grey-green leaves. The fragrance of the wild crab apple flowers fills the moist, soft air, a *Dianthus*-like fragrance, a perfume which is peculiarly part of the Illinois country when it is spring and the whole tremulous pattern of growth unfolds in an April rain.

The white-throated sparrows pipe in the wet leaves beneath the pink-flowered trees. A wood thrush in a tree top offers a soulful carol to the grey sky. Insects are quiescent in the rain, but a keen-eyed little kinglet flits about busily hunting for minute gnats. And the fragrance of the pink flowers is one with the April song and movement and color.

The wild crab apple trees are low and gnarled and spiny. They make a thicket at the edge of the woods or along the road, low, not especially conspicuous except when they put pink bouquets across the countryside. Quickly, as the flowers go and the oval leaves mature, they assume their uniform green color of summer. And in the midst of the leaves little green apples form.

In September, in October, as the leaves fall and the polished stems show again, there are yellow-green, sticky apples which have as unique a fragrance as the flowers did in spring. The rich pungence of the wild crab apples, like the smell of autumn leaves, is part of the Illinois autumn. The apples are hard; they are exceedingly sour. They twirl gently on their stems in the late autumn sunshine, then drop with small thuds to lie mellowing on the ground. Many lie there all winter long, odorous under snow and leaves, and soften sufficiently in spring to be pecked apart by newly arrived robins.



GREEK VALERIAN (Bluebells. Jacob's Ladder)

Polemonium reptans L.

April - May Bluebells, the children called them, and gathered
Woods, roadsides handfuls of the thin green stems with their racemes
of pale blue bellflowers. Where the Virginia bluebell
did not grow, the cabin children of Illinois knew the flowers of Greek
valerian as bluebells, and took bouquets to their mothers and teachers.

Greek valerian grows in a bushy, low plant in which many stems
spring up from a perennial rootstock. Each stem is hung with the round-
petaled, little sky-colored bells with their curled white stamens. They
last a long time in bloom, for they begin in late April and there still are
a few pale flowers when shade has come to the woodlands and late May
approaches June.

The leaves of Greek valerian are compound, with narrow, oval
leaflets of shiny dark green arranged much like fern leaves from the
base of the plant and along the flower stems.

Greek valerian is a member of the Phlox family, but has little of
the family resemblance. It is at its best in the rocky, hilly woods, there
where the leaf-mold is deep and cool, where moss beds are green and, in
the pleasant dewy dampness of dawn the snails move on slimy trails
across the leaves and moss. Lady beetles which had gathered in a crowd
of dozens beneath leaves near the valerian are out hunting early aphids,
and crawl up the valerian stems in search of food. They are all part of
that picture of a particular woodland—the blue valerian bells, the insects,
the snails, the pearls of moisture on the leaves, the crisp moss, the song
of a veery in the haw bushes.



CALAMUS (Sweet Flag)

Acorus calamus L.

April - May
Swamps, ponds

Fragrant along the pond's edge and in the pasture rivulet grow the beds of calamus, the sweet flag. Shining and dark bright green, the ridged, sword-like leaves quiver in the wind and rain, bend flat in a storm, rise again, or are crushed where the cows on a hot day bed down in the cool and aromatic leaves.

Calamus grows in broad colonies, not as a single plant. The traveling rootstock sends up stalk after stalk; the colony becomes an underground mat of white roots with hundreds upon hundreds of leaves standing erect.

In spring there emerge from certain stalks—they look like leaves but properly are not—spikes of yellow, pollen-laden flowers. These are much like the lower part of the spadix of the jack-in-the-pulpit, to which family it belongs, but there is no spathe to curl itself over or around the spadix. The elongation of the green flowering stalk, however, may be called a spathe of sorts, though it does not enclose the spadix at all. Rather, this juts from the stem and gleams in the sun, is host to early insects and then, in summer, forms a tight club of green fruits.

The entire calamus plant is aromatic from the root to the tip of the leaf and the flower itself. It is a pleasant fragrance, enhanced when chewed, and the root for many generations since the time of the Indians has been used as an aid in relieving the discomfort of dyspepsia and colic. As such it is even now in the pharmacies under the old name of calamus.



GREEN VIOLET

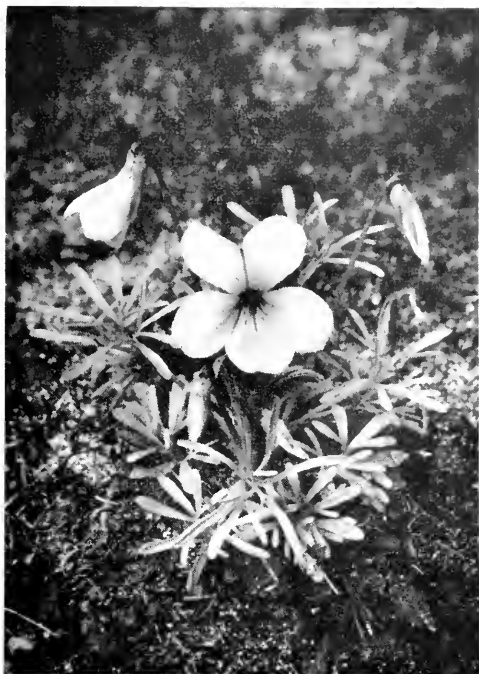
Hybanthus concolor (Forst.) Spreng.

April - May They call it a violet, but at least the botanists put the
Deep woods green violet in a separate genus, *Hybanthus*, under the family of *Violaceae*, the violets. Else it would seem more out of place in such elegant company than it does. Green violet looks very much like a small, commonplace, uninspiring, unbeautiful weed. But the flower has the same structure as a violet.

Superficially it may appear as un-violetlike as any plant one might find—a tall stem, hairy, with long tapering leaves set alternately upon it, and, in the axils of the leaves, queer little green flowers of a peculiar shape. But on examining these little flowers under a magnifying glass, one who is not a botanist may discover something surprising. That little green thing really does look something like a violet. The color is all wrong, of course; a green flower always looks like something unborn, something too soon out of the bud and uncolored as yet by the sunshine.

But green violets stay green. Their tiny green petals enclose a seed-producing mechanism, a pod, which is properly violet-like and thus puts the green violet automatically into an order of flowers noted for beautiful blossoms.

Green violet is found not commonly but occasionally in Illinois, in moist ravines, in woods along creeks, in woods rich in moist leaf mold and shaded by tall trees.



BIRD-FOOT VIOLET (Crowfoot Violet)

Viola pedata L.

April - May
Prairie hills,
sandy woods, rocks

Where the prairie hills lie like supine animals upon whose long forms the ruddy prairie grass blows like fur, the bird-foot violets bloom in spring. They are creatures of spring winds and

the dry loess hills, of sandhills and clay slopes, of rocky places in sunny woods, of sunny places among the black jack oaks and red cedars. Compact and low, the little plants grow from tough prairie soil and produce blossoms which are super violets. The flowers are larger than those of ordinary violets and the little plants are much smaller. This tends to exaggerate them, to make them more akin to cultivated plants than to the wild, which so often is more prodigal in the size of its leaves than its flowers.

The bird-foot violet is a pale sky-blue-lavender with an orange pistil tipped with pale green, protruding from the beardless center of the flower. The oblong petals spread wide. The leaves are on short stems and are so deeply cut into narrow lobes that they appear almost compound. They may be only the size of a fifty-cent piece, cut deeply to the very center where the stem springs.

One variety of the bird-foot violet that is common in Illinois is often called variety *concolor* in contrast to the rarer one having the two upper dark purple and the three lower lilac-purple. This is often termed variety *bicolor*. Occasionally a white-flowered one is found which may be called variety *alba*.



PRAIRIE VIOLET

Viola pedatifida G. Don.

April - May

Prairie roadsides

In the Violet tribe there are two types of growth. There are stemless violets and violets with true stems; it's as simple as that, their division. The so-called stemless violets are like the common blue violet and many others which have leaves and flowers on separate stalks rising from the true stem. This is really a thick, gnarly rootstock growing horizontally in the ground. The stemmed violets have true stalks which rise from a fibrous root. Leaves are placed alternately upon the forking stem, and the flowers on thin petioles spring from the axils of the leaves. These flowers produce seeds; in the stemless violets, the colored flowers seldom make seeds. Instead, in summer they produce short-stalked, green, fat, seed-making flowers which have no petals. These are called cleistogamous flowers; they make large quantities of seeds. These are dispersed when the three-parted pods burst in late summer and they usually germinate in great abundance to make many new violet seedlings.

One of the stemless species is the prairie violet. Its flowers are light lavender-blue with a white-furred throat. They stand on long thin stems above the leaves which appear almost as if someone had taken common blue violet leaves and with scissors had lobed them deeply. The leaves of *Viola pedatifida* somewhat resemble the still more deeply cut leaves of the bird-foot violet, but the flowers are not large and their shape and color prove them to be true prairie violets instead. They are found on open prairie soil between the railroad tracks and highways in many places in the state.



HAIRY BLUE VIOLET

Viola sororia Willd.

April - May
Woods, roadsides

There is little difference between the hairy blue violet and the common blue; sometimes they are almost indistinguishable. Their main difference is this: the common blue violet is smooth; the hairy blue violet has a fine silky-hairy stem and smaller, more finely toothed leaves. The flowers usually are a paler lavender blue. But both are loved by almost everyone who knows any flowers at all.

Violets have been a great boon to pickers of spring flowers. By the very abundance of violets, the strain on the rarer flowers is partially lessened. For although trout lilies, lady's slippers, trilliums, and many more, may be destroyed by picking, the violet plants seem none the worse for the ordeal. It is difficult to kill violet plants by over-picking. They multiply rapidly by extending their rootstocks, in addition to the manufacture of abundant seeds by means of cleistogamous flowers in summer. Violets, therefore, are common, which is indeed a fortunate circumstance, for in their popularity they might long since have vanished from the land.

Violets were known and loved long ago in ancient Greece and Rome; they have been made into perfume and poetry and paintings and corsages. In the United States, four states call the violet their special emblem—Illinois, New Jersey, Rhode Island, and Wisconsin. Now into the woods and swamps and meadows and roadsides and gardens of an April land, blue violets once again come into blossom and fulfill a certain promise of the spring.

The wild blue violet which is the state flower of Illinois usually is identified by naturalists as the smooth meadow blue violet (*Viola papilionacea*), but there are about a dozen species of these beautiful flowers. The best known and most widely distributed is perhaps the hairy blue violet, (*Viola sororia*), while almost as common in the wet woods is the marsh blue violet, (*Viola cucullata*).



OVATE-LEAVED VIOLET

Viola fimbriatula Sm.

April - May When late April brings new leaves like cut-out pink and
Hilly woods white velvet on the oak trees, and when on the dry clay
 hills of the oak woods the trout lilies are out of bloom,
 there may come the neat plants of ovate-leaved violets with their purple
 flowers.

These are compact violet plants; the common blue violet is sometimes untidy in appearance, bushy and leafy in contrast. The ovate-leaved violet's leaves are narrow, neatly scalloped, on stems which often are short enough to permit the flower stems to stand well above them. Here above the spade-shaped, dark green leaves are bright purple violets. They are broader than the common violet's flowers, usually are a brighter, clearer purple, and there is less white fur near the center of the flower than is found in many other violets in Illinois.

The ovate-leaved violet is one of those uncommon species which frequently is overlooked simply because to many eyes a violet is a violet, regardless of species. It happens that in the eastern states alone there are forty-five species of violets, as listed in *Gray's Manual of Botany*. In the west there are many more. In each species, the flowers almost all bear the typical violet shape—two petals above, two at the side, a trough-shaped petal at the bottom, a short, sac-like tube at the back where the nectar lies, and a small yellow aperture in the center of the flower where insects probe for nectar. The colors of violets vary from white to yellow and from pale lavender to deep purple.



LANCE-LEAVED VIOLET

Viola lanceolata L.

April - May

Moist acid sandy soils

These little white violets are often not more than three inches high, the flowers are small, delicate with dark red lines leading to the center and they are fragrant with a strong, pervasive scent. The leaves are from two to five inches long and about a half inch wide, tapered at both ends with reddish petioles.

They belong to the picture of spring in the north. Yet these violets are very common in some poorly drained moist sandy fields in Lee, Cook and Kankakee counties in northern Illinois and in a few other rare hidden southern places in this state.

Although most white violets are creatures of the north—the little lance-leaved violet of the glacial sands around northern lakes, the small sweet white violets in a sphagnum bog or in a wet swale, the Canada violet of the highlands. The pale or striped violet (*Viola striata*) is a blossom for everyone to find and enjoy. It is spread fairly abundantly through the woods and along the streams in Illinois, and blooms steadily from the middle of April until June.

This violet begins with a low, compact plant down in the grass of the sunny woods. The flowers are creamy white with blue bee-lines on the lower petal, and long, cream-colored fur in the center of the flower. The stems at this stage are short, the leaves small. Then as the season advances and shade grows, the pale violet's plant grows, too. The stem becomes long and rather weak, the deeply toothed stipules at the axils of the leaves are long and ragged. The flowers, on thin stalks, are smaller now and have narrower petals. But the charm of a white violet is still there until at last in June the flower ceases blooming until another springtime comes to the woods.



SMOOTH YELLOW VIOLET

Viola eriocarpa Schw.

April-May
Oak woods

Certain flowers are found together. Almost invariably if one finds a particular species in a particular place, he finds others which belong in that same association of plants. Thus, when it happens that spring has come back and the oak woods are in bloom, yellow violets blossom in company with red trilliums, Dutchman's breeches, mayapples, and wild blue phlox. Find one, find them all—almost always.

The smooth yellow violet is one of the branched species of that extensive clan. The stems are smooth and yellow-green and are much branched. The leaves are heart-shaped, the shape of those found on the common blue violet. The flowers are borne on long, thin stems and are a bright butter yellow with delicate brown hair-lines along which insects are guided to the nectar.

The yellow violet comes at a time when life is really awakening in earnest in the oak woods. The snails are out in the good moisture of an April morning. There is a shining black salamander under a log, a salamander which in the soft April night went to the pond to lay its eggs. Last night, too, the toads were trilling softly in the woods. The whip-poor-wills came back and added their own urgent voices to the night chorus. Now in the spring sunshine there is a mourning cloak butterfly flitting about in search of a willow on which to lay eggs. Beneath a spice bush a towhee has made its nest and scratches energetically among the leaves. Spring. Oak woods. Yellow violets.



BLUE COHOSH (Papoose Root. Squawroot)

Caulophyllum thalictroides (L.) Michx.

April-May Woods

It is a strange, aloof plant, the blue cohosh, as it stands in the damp April woods. There is nothing else quite like it, this member of the Barberry family, for although it is related to mayapples, barberries, and Oregon grape, it seems to have little which connects it in appearance with these dissimilar plants.

Up through the damp leafmold of the northern woods there rises a single pale, downy stem from a knotty root. The stem bears a single leaf or two, each of which actually appears to be three groups of three leaflets much resembling those of meadow rue or *Thalictrum*, hence the specific name. The true leaf, however, is so divided that it appears to be more than one. Above it stands a loose cluster of flowers. They are a pale, brassy, greenish lavender with six blunt sepals and a curious center composed of six small, pouched petals. There are six stamens and a single pistil. Aloof and tall among the April flowers covering the forest floor, the plant of blue cohosh stands alone.

In August, in place of the flowers, there is a loose cluster of military-blue fruits which are soon eaten by birds. The leaves by this time have hardened and have grown dark green, but still are no more abundant than before.

Papoose root, blue cohosh, squawroot, blueberry—these all are names given to *Caulophyllum thalictroides*. Every one of its names has meaning. *Caulophyllum* means stem-leaf, since the stem seems to form a stalk for the great compound leaf. The medicinal root was used by the Indians as an antispasmodic in infant convulsions—papoose root—and as an aid in quick childbirth—squawroot. The bright blue fruits easily gave it the name of blueberry.



UPRIGHT YELLOW WOOD-SORREL

Oxalis stricta L.

April - June "Sour-grass", the children call the leaves of yellow
Lawns, gardens oxalis, or call the seeds "pickles" and gather them for
 doll feasts or for brief refreshment during play. For
 the yellow wood-sorrel is not truly a woodland species, but comes into
 pastures, gardens, and lawns where the soil is somewhat acid, blooms its
 bright buttercup-yellow flowers and makes innumerable fat green seeds.
 Like the other members of the wood-sorrel family, the entire plant is
 acid. The bright green leaves are three-parted, each section heart-shaped.
 It is said that the original Irish shamrock was an oxalis with this same
 plan of leaf.

Yellow wood-sorrel begins to bloom in April and continues to blossom steadily during most of the summer, seeds itself, and sends up a new crop of plants before the season is over. There are several species which bear yellow flowers, as well as the more rare violet wood-sorrel and the white oxalis. The latter is a plant of the cool northern bogs and moist, mossy, coniferous woods; the violet wood-sorrel of Illinois oak woods and rocky places from Massachusetts to Minnesota and southward, while the yellow prefers sunny, sandy soil.

There are two yellow-flowered sorrels in Illinois that are often confused. *Oxalis stricta* is often found in open fallow fields and pastures but sometimes comes into open woods. It is usually branched at the base and its capsules are finely pubescent. The common yellow wood-sorrel (*Oxalis cymosa*), has flowers similar to the above species, but does not branch near the base and is strictly a woodland plant. It is often two feet tall with scattered flowers followed by nearly smooth capsules.



VIOLET WOOD-SORREL

Oxalis violacea L.

April - May
Oak woods, dry slopes

It was early May in the Kickapoo Valley when the photographer came upon violet wood-sorrel in bloom in the oak woods. He found it in the sort of place in which it usually grows—the acid soil where black oaks and pignut hickories and yellow star grass are found, a sour soil to support a sour plant. For the word *Oxalis* means sour, because of the acidulous leaves and the watery, acid stem.

To the hiker, the sorrels are peculiarly pleasant to find on a warm day in spring. The leaves and stems as well as the tight green pods of seeds are all acid to the taste and are almost as refreshing as a glass of fresh spring water. The three-parted shamrock leaves often have been used in salads, but should be used sparingly because of the oxalic acid which they contain, and which is not good when taken in too great a quantity.

The violet wood-sorrel has five-parted, lavender-rose flowers on slender, smooth, purplish stems, usually several flowers to a stem. All the leaves and flower stalks spring separately from the hairy little brown corm from which slender roots go down into the dry soil. This is unlike the yellow sorrels which have branching stems. The leaves of *Oxalis violacea* are silvery green with red blotches on each of the heart-shaped leaflets. They are sensitive to changing hours of daylight and fold themselves together at sundown, to remain so until the increasing light rays of dawn open them wide again.



JACK-IN-THE-PULPIT (Indian Turnip)

Arisaema triphyllum (L.) Schott

April - May

Deep woods, slopes

Gleaming like a creation in pale green wax, the Jack-in-the-pulpit stands erect and perfect in the springtime sunlight. Here is a plant whose economy of design is complete as it stands; this is it. There will be no more growth of leaf or stem this year. Here is a sheath around the base of the stem, a stem which forks just above the sheath so that one fork becomes a flower stalk and the other a leaf stalk. Both are mottled with pale purple or simply are pale green and watery inside, yet nevertheless are stiff and erect. The Jack-in-the-pulpit seldom or never reclines; it is alert, as if standing crisply at attention.

The top of the petiole (sometimes there are two) is composed of three spreading green leaflets arranged triangularly. The veining is prominent; this is part of the beauty of the Jack-in-the-pulpit leaf. The flowering stem is more slender and at its tip is a unique creation in these American woods: this is the Jack-in-the-pulpit itself and there is nothing else like it. The pulpit is an enclosing green sheath with a flap held high at the top, surrounding and protecting a stiff green spadix (the Jack itself) at the bottom of which are the true flowers. The upper part of the spadix is smooth and pale green. It tapers and constricts past its middle, and below this are tiny, closely packed, yellow staminate flowers or tiny green, knobby, pistillate flowers.

The Jack-in-the-pulpit grows, as the green dragon does, from a flat corm containing irritating raphide crystals. In using the corm or "Indian turnip" for food, however, the Indians boiled it and thus rendered the crystals soft and harmless. To the uninitiated, the raw root on the tongue may be a dreadful experience.



DRAGON ARUM (Green Dragon)

Arisaema dracontium (L.) Schott

April - May There is nothing at all like the green dragon in the Illi-
Deep woods nois woods. The name *dracontium* and the appearance,
which is indeed somewhat dragon-like, produce a slightly
sinister aspect in a common spring flower. It does not seem much like
a flower, although the dragon arum blooms and produces seeds. The
flower is all green with a long, protruding orange or yellow tip of the
spadix extending beyond the green envelope in which are the true flowers.
These are arranged on a club or spadix, as in the closely related Jack-in-
the-pulpit, and later they form seeds.

Thrusting a stiff, white, pointed shoot through the spring oak woods,
the dragon arum appears in April. The folded leaves and stem are en-
closed at first in this white sheath, and later it remains around the base
of the mottled, pale green stem. This extends straight upward with the
leaves drooping above; then suddenly the T-shaped stem and leaves take
form. The oval, thin, dark green and veiny leaves are attached to this
cross-piece in a semi-circular manner to make a diadem of glossy green
leaves. With all this ado of herbage, the flower is something of an anti-
climax. It is not particularly beautiful. But later in the summer the
spadix has formed a magnificent club of shining dark green fruits. By
October these have turned brilliant crimson. Each individual berry
catches the sunlight; it is one of the fine sights of the woods on an
autumn day in Illinois.

Dragon arum grows from a solid corm which is set not very deeply
in the ground. Like the corm of Jack-in-the-pulpit, this contains sharp-
spiked crystals called raphides which are violently irritating when taken
into the mouth.



WILD GERANIUM (Cranesbill)

Geranium maculatum L.

April - May Kin to that wild red geranium of the African veld, sent
Sunny woods to Holland to become the ancestor of all cultivated geraniums, the pale pink wild geranium of the Illinois woods comes into bloom when April is almost over and May is on the land.

The wild geranium is unlike many spring flowers in that it produces a good sized plant before it blooms. Since it comes later than those earliest flowers which send up their leaves and flower buds ready for immediate action, the wild geranium takes its time. The leaves come up as early as the earliest dutchman's breeches and spring beauties—small, beautifully formed, rose-colored leaves bent down over a small curving stem. Slowly they expand until the leaves stand on foot-long stalks around the base of the plant. In the midst rise the flowering stalks. There usually is a single whorl of leaves—perhaps three to six deeply toothed and divided leaves, veiny, hairy, dark green. From the stem where the leaves spring outward, the flowering stalks bear a loose cluster of large, single flowers. Their resemblance to a single cultivated geranium flower is marked; the color is lavender-pink, of varying degrees of intensity depending upon the amount of sun they receive.

The wild geranium has a remarkable arrangement to prevent self pollination. It has lost the power of self-fertilization, but instead ripens first the outer, then the inner row of anthers. As soon as the pollen has been removed from the anthers they are immediately shed to prevent any chance of self-pollination. Not until the stamens are sterile will the stigmas of the five-parted pistil become fertile to receive pollen from other geranium flowers.



FALSE SPIKENARD (Solomon's Plume)

Smilacina racemosa (L.) Desf.

May Woods Like a creamy white plume, the flowers of the false spikenard emit a delicate scent in the spring woods. The tall spike bends in an arc beneath the oaks. False spikenard is one of the mid-spring flowers of Illinois, one which often carries its bloom well past mid-May when the warblers are at their height of abundance and summer is just over the horizon.

False spikenard grows with a degree of elegance not found in all plants; it is in its character to hold its glossy, ribbed, bright green leaves sharply at angles, alternately on the stem, with the single plume of flowers at the top of the stem. It neither branches nor varies from this plan. Usually the creeping rootstocks send up many plants so that false spikenard, like the false Solomon's seal, grows well accompanied by its own kind.

May. The leaves have come on the oaks and shagbarks and the shade grows deeper in the woods. The last of the morels spring up in the moist sandy soil; a day or two of heat and they are finished. The redbuds are out of bloom; so are the wild crabs and plums; the breath of June is on the land and the time of small, concise woods flowers is quickly passing.

But beneath the arching stems of the false spikenard the Kentucky warbler may have built a nest of grass wreathed around in a cup, and there are five russet-speckled eggs. When at last the stamen-filled flower head of the spikenard falls away and lets petals and stamens scatter into the nest and on the ground, summer at last is here and the spikenard fruits are developing. By late summer and early autumn the little berries are translucent red or speckled white and red. By October they are clear carmine fruits which the robins eat, and which, perhaps, the last migrating Kentucky warbler pauses a moment to pluck and eat before going on to the south.



FALSE SOLOMON'S SEAL

Smilacina stellata (L.) Desf.

May
Sandy woods

Among the lilies, which it outwardly resembles very little, is the false Solomon's seal. In this plant the flowers are built according to the prescribed lily plan of six—three sepals and three petals, which combine to make six petal-like parts. There are six stamens; and the end of the pistil is three parted. The seed has three cavities. The leaves are simple, tapering, clasping the stem, and they have long veins paralleling each other the length of the leaf.

False Solomon's seal has none of the appearance of the true Solomon's seal. Although both are lilies, they are in different genera, and the Smilacinas are flowers with terminal spikes of small white flowers with protruding stamens.

False Solomon's seal is a plant of the sand country, of the sandy woods where the bittersweet twines and the black oaks grow. Here on a sloping bank the colony of false Solomon's seal plants stand almost erect and stiff in the spring sunshine and produce their small clusters of white flowers abundantly through the woods. In the shelter of those arching stems a white-throated sparrow may pipe beneath the stalks and take a bath in the sand. Early insects come to sip nectar at the slightly fragrant flowers, and the entire enactment of spring in the black oak woods takes place now in early May around the false Solomon's seal colony.



SOLOMON'S SEAL

Polygonatum biflorum (Walt.) Ell.

May Woods

Bending in splendid architecture, the stem of Solomon's seal curves in a Romanesque arch and, in elegant order, bears leaves above and flowers below.

The flowers are green, narrow bells with six slightly recurving flower parts. Inside are the six, polleny stamens and the thin pistil. The leaves, much like those of false spikenard, are oval, tapered, and stand erect above the stem. The fruits, hanging in pairs or trios as the flowers did, are as big as a large pea, at first are green and then turn a dark Prussian blue.

Back of the name given to Solomon's seal is the mystic symbol known as the Seal of Solomon, far back in the days of the Old Testament. The Seal was composed of two interlacing triangles, one light and the other dark, representing the union of the soul and the body, just as the Chinese mystic symbol of the Yang and the Yin carried out the same idea. In the ancient legend, the Seal of Solomon was actually a finger ring with a mirror in the center in which Solomon, in a sort of ancient television, could see persons and events far away. Much later, the symbolic representation of the two triangles forming a six-pointed star was used as an amulet to ward off fevers and illnesses.

The days of King Solomon and his mystic seal and the ring in which he saw visions seem to be remote and to have no connection with any plant in an Illinois woods. But the connection is there. Someone more discerning than the rest, in the early days of America, saw the strange knobby rootstocks of the Solomon's seal and discovered in certain scars on the rootstocks a striking resemblance to the fabulous Seal of Solomon.



SHOOTING-STAR

Dodecatheon meadia L.

April - May
Prairies, wooded hills

"Dodecatheon", Flower of the Twelve Gods, said Pliny when he told of the primrose, which was believed to be under the care of the twelve superior gods of Olympus. A member of the Primrose family, the shooting star, was named Dodecatheon by Linnaeus, perhaps because of the unusual form and color of the flower, the regal elegance of the plant.

For shooting-star is one of the truly aristocratic plants of the Illinois springtime. It springs from a tuft of long, strap-like, pale green leaves with pink midribs forming a compact base from which rise one or several stiff green or ruddy stems. At the top of these is a cluster of buds which, as they reach flowering time, stand on slender arching stems so that the flower cluster does not appear crowded. The flowers have a unique shape, much like that of the cultivated cyclamen—five stiffly recurved petals bent straight back from a protruding pistil and the closely pressed-together stamens. These make a yellow beak; small red-brown dots are marked on the petals where they meet the stamens. Sometimes the flowers are pink or lavender-rose; at other times they are white.

Shooting-star, unlike many plants which demand either sun or shade, but seldom both, will grow equally well out on the open prairie, there between the railroad tracks and the highway, along with wild hyacinth and puccoon, as it does on the cool, moist, clay slope of a north hill. The plants on the wooded hills tend to be more delicate and thin, with paler pink flowers than the prairie plants. These are stout and lush to withstand the force of prairie wind and an April sun which even so early in the season can be strong when its beams are uninterrupted by the presence of trees.



PRAIRIE PHLOX

Phlox pilosa L.

May

Prairie roadsides

Orange puccoon is in bloom and the magenta-pink flowers of prairie phlox blossom brightly along the railroad right-of-way. If the two casually grow close to each other, the clashing of bright pigments may offend the sensitive eye; one shudders and turns away.

But somehow in all the world of green in which wild flowers are found, color clashes seldom occur; there is almost always enough of the mediating green to set each color apart where, in itself, it is pleasant to look at.

Prairie phlox is a member of that prairie clan growing in the heavy black sod of the original prairie still remaining along certain highways and railroads. In this tight black soil, matted with generations of roots, the tap roots of the phlox penetrate and the plants grow. In May they send up a tuft of stems covered with masses of narrow-petaled, bright pink flowers, some lavender-pink, some white with a purple-red eye. The stems are thin and densely fine-hairy; the leaves, as in all phloxes, are opposite and stemless, narrow and stiff. The tight buds are furled in the manner of an umbrella, and unroll to lay out the five blunt petals around a darker center ending in a tube.

Prairie phlox is brilliant there along the highway. The orange puccoon is far enough away not to offend with its nearness. The redwinged blackbird on the wire above expands itself in song. The dickcissels are back, endlessly chanting from fence posts or old prairie dock stalks, and soon among the grasses, when the phlox is out of bloom, the dickcissels will build a nest. By that time spring and the wild phlox will be past. It will be June again, high summer on the prairie.



WOOD BETONY (Common Lousewort)

Pedicularis canadensis L.

April - May
Wooded hills

The wood betony is a decidedly curly plant—the flowers are curled and so are the flower heads and bracts, and so, emphatically, are the leaves. In a curly tuft the betony springs up in the hilly woods and before April is past the plants are in bloom.

Betony is a compact, rather low yet massive plant. The leaves are mostly basal, finely toothed and divided much in the manner of yarrow leaves. The downy stems are topped with a whorl of small, finely cut leaves and the flower head, a dense mass, has tubular, mint-like, pale yellow and red flowers. The leaves and seeding heads remain for the rest of the growing season.

Wood betony is a creature of deep woods and the rocky hills along the rivers. There it perches among the rocks where the spring earth is saturated with water, and at the height of its bloom it may be called an attractive plant. At other times it seems only somewhat untidy and overdone. In deep hilly woods it grows beside trails and on bushy slopes, and when not in bloom it may be passed by as a low and insignificant fern.

It was said long ago, and perhaps really believed, that the sheep which fed on the betony became infested with lice. So the defenseless betony was called lousewort, and was given a Latin name which clinched that insult forever—*Pedicularis*, named for *Pedicula*, the common louse.

Similar to the above in leaves and flowers is the swamp lousewort (*Pedicularis lanceolata*). It grows in swamps and is common throughout most of the state. The stem is from one to three feet tall and shows little branching.



GOLDEN RAGWORT

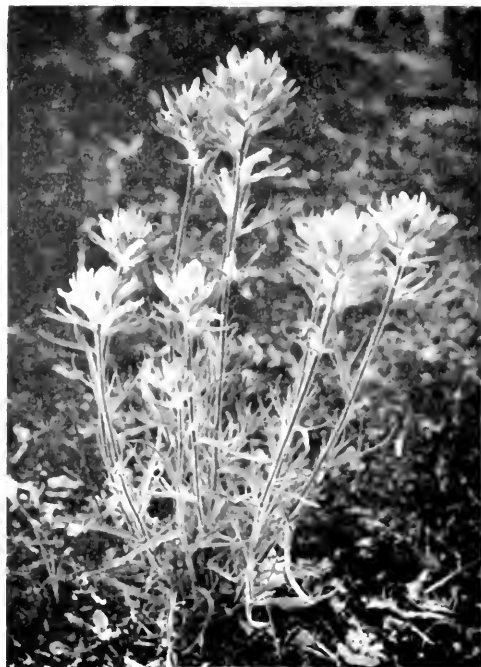
Senecio aureus L.

May Few Composites blossom early in the season. Most of
Deep woods them seem to require a good deal of time to develop proper plants and flower heads, but in May the golden ragwort suddenly blooms. It and the dandelions often are the only yellow Composites to make their appearance before high summer.

Ragwort or groundsel comes in mid-May in woods where the last of the wild blue phlox still is scattered among the growing substrata of plants in the woodland. The ragwort presents a bright splash of color on a dark, damp hill-side—such bright golden, miniature yellow asters catch the decreased sunlight which penetrates the leaf canopy and magnifies it all out of proportion to its true amount.

Ragwort starts with a basal rosette of dark green, glossy leaves which are oval and slightly toothed. As the stems begin to grow, the leaves upon them are different in shape, often spade-shaped, deeply toothed or lobed, and up the stem the leaves are so deeply cut that they appear almost compound. The uppermost leaves are much like those of tansy or betony. Above them are the many-branched heads of flowers with their bright yellow rays and orange-yellow centers. The plant is a juicy one, easily wilting, with none of that weediness of growth which so commonly characterizes the yellow Composites of summertime.

The butterweed (*Senecio glabellus*) grows two to three feet tall and has hollow, stout, ridged, glossy stalks. The flowers, similar in form to those of golden ragwort, are produced in a flat, broad cluster at the top of the stem. The basal leaves are large and deeply cut, the stem leaves growing smaller up the stem. Butterweed is found in wet woods and at the edges of swamps from April to June.



INDIAN PAINTBRUSH (Painted Cup)

Castilleja coccinea (L.) Spreng.

May - June

Open hills, roadsides

The Indian paintbrush or painted cup seems more like a western flower than one of the central or eastern plants, and it is true that it very likely migrated into Illinois with the coming of other plants of the Great Plains. Paintbrush is most commonly known as part of that western scene which includes the rarified air of mountains or the dusty roadsides of the plains. Indian paintbrush is a plant of the prairies and sands, yet in Colorado it may be found from the lowest of the foothills where the lark buntings fly, to the upper flower meadows at ten thousand feet where mountain bluebirds nest. In the sand country of Illinois, the Indian paintbrush also thrives, but it is not common.

Indian paintbrush was appropriately named for a Spanish botanist named Domingo Castillejo—appropriate because the Indian paintbrush of the west was seen by the earliest Spanish explorers and adventurers who penetrated that wild and unknown wilderness of sage and rocks and rattlesnakes in search of the fabled Seven Cities of Cibola.

The plant is a foot or two tall and grows in a clump. Thin, narrow, hairy leaves are placed alternately along the stem. The flower head is composed of bright scarlet flower-like leaves and yellow corolla tubes with protruding pistils. The combination of the colored leaves and flowers gives that dipped-in-paint effect which named the Indian paintbrush, a name by which it is known wherever it grows. The Castilleja is parasitic upon the roots of other plants and therefore cannot be transplanted. It blooms in May and June.



ONE-FLOWERED CANCER-ROOT

Orobanche uniflora L.

May

Hilly woods

The spring hill is alive with growing, singing, blossoming things—with oaks just coming into new leaf, and warblers flitting and singing among them . . . with young squirrels in a hole in a hickory, and a crested flycatcher shrieking in spring ecstasy on a dead branch . . . with dogwood shining in white bloom on the hillside, and wild raisin blossoming too, and a red admiral butterfly dallying from flower to flower and from tree to tree. In the lower strata of the hill woods, the Christmas ferns stretch out their new, pale fronds. Mayapples and wild geraniums are in bloom; so are the wild blue phlox and the sand phlox and wild columbine. The floor of the woods itself is still covered with its coating of glossy old brown oak leaves. And jutting through the leaves, there on a steep slope, are three slender pale stems with three, violet-shaped tubular flowers of palest lavender. The throat of the flower is folded in pleats and is bright canary yellow, and there is a slight fragrance which becomes part of the springtime, there on the hill. Here is that non-green parasitic plant, the one-flowered cancer-root, growing up from its host plant's roots in the oak woods.

One-flowered cancer-root is a member of the Broomrape family which is composed of parasitic plants. It is found on the roots of asters and goldenrods and does not seem to harm the host plants.



BROOMRAPE

Orobanche fasciculata Nutt.

**April - August
Sands**

It is the tremendous function of most plants to manufacture their own food and at the same time provide food for all other living things. Yet there are certain plants which do not make their own food. They are parasitic upon the roots or stems of other plants which usually are little the worse for the drain upon their substance.

Broomrape grows in sandy ground and is found as a parasite on *Artemisia*, *Eriogonum*, and certain other plants found in similar habitats. Broomrape is a complete parasite. The seeds seem to germinate only in contact with the roots of the host plants; the broomrape stems spring directly from the host's roots and has none of its own. The larger broomrape has been found on *Artemisia* plants which were dying from the drain of several parasites upon them.

From April to August, the broomrape sends up purplish, thickly downy, stout stems; there are a few triangular purplish scales along the stem, but no true leaves, and no greenness. At the top of the stem is a bud enwrapped in five triangular scales and from this emerges a long, curving, tubular, purplish flower which expands with five lobes. Insects fertilize the flowers and eventually seeds form and fall to the ground. Only those which are washed down through the soil to make contact with the roots of *Artemisia* will germinate and send up new broomrape plants.



WILD LUPINE

Lupinus perennis L.

May - June
Sands, dune country

Denizen of the sand country, the blue spires of lupine stand erect in the blazing spring sunshine.

Sand country plants are especially fitted to bloom in the limited haunts which they prefer. They must be able to subsist on moisture which drains in deeply when it comes; at other times they live in a dry, desert-like habitat. A sand plant must have a deep root to go down to any water far below the surface, and must have leaves which are able to survive the baking heat and intense light of summer. Ornamental and interesting plants grow in the sand country, there where old sand dunes lie as sand fields along the river.

Blue lupine is the only one of its kind in Illinois; on the other side of the Mississippi, westward through the plains and peaks to the Pacific, other lupines are abundant. The Texas blue-bonnet is a lupine; there are bright lupines with California poppies in vacant lots in Los Angeles. But from Maine to Minnesota and south to the Gulf, always in that favorite sandy soil, the wild lupine grows and blooms and makes pods of small peas for the horned larks and bob-whites to eat. In the time of the Indians who camped along the rivers, the Indian women may have gathered the little lupine peas; they were boiled or roasted and eaten in a land where every edible seed counted in keeping hunger at bay.

Lupine flowers are the form known as pea-shaped—like a small sweet pea, lavender-blue, on short, hairy stems arranged circularly around the upright stalk. The leaves are palmately compound, arranged like fingers of a hand, and when the sun is too hot, they fold themselves in half and droop on their mobile pedicels.



BLUE-EYED MARY (Baby Blue Eyes)

Collinsia verna Nutt.

May It is May. The hilly woods are full of drifts of lavender
Hilly woods phlox, with the last of the spring beauties and the yellow
 of bellwort. The oaks are putting out new little velvet
 leaves which now are pale pink and white and carmine, small, as if cut
 out in miniature from soft velvet. Birds are everywhere now and the
 morning chorus of song has grown to the proportions of that splendid
 annual spring concert which makes the mornings memorable.

In certain hill woods in Illinois there are hosts of little blue and
 white flowers which blossom for a little while and then are gone into the
 oblivion into which spring flowers go when their time is up.

These are the blue-eyed Marys or Collinsias. Annuals, they come up
 from seeds dropped the summer before and produce thin, easily wilting,
 little green plants with opposite, stemless leaves. The flowers appear
 at the tops of the stalks, and in its flowers the Collinsia is rescued from
 oblivion or ordinariness to which its simple, weak plant might condemn
 it. For the flowers are the sort to make people exclaim when they first
 find them, flowers to make any woods exciting.

The flower is deeply cleft in five, though it appears to be two petals
 above and two below. The upper are creamy white, the lower bright
 gentian blue marked with white lines. In whorls around the stem these
 bright flowers bloom briefly while spring is at its height.

The violet collinsia (*Collinsia violacea*) abounds in rich sandy soil
 from Arkansas to Texas, and in Illinois it occurs in two small stands
 in Shelby County. The upper lip of the corolla is white or nearly white,
 the lower deep violet.



WILD HYACINTH (Camas. Quamash)

Camassia scilloides (Raf.) Cory

April - May

Grassy woods, prairies

When the last glacier departed, it left broad blue lakes on what later became the Illinois country. When the lakes grew less and the vegetation pushed in from every side until there was only a pond of open water in the middle, until that, too, was gone, there came into existence broad marshes to take the place of the lakes. And then the marshes grew drier and became the wet prairie of Illinois.

The soil was deep and black and matted with undecayed roots of prairie grasses and marsh plants. And for acres, in the old prairie, flowers bloomed from the bed of what used to be an ancient lake. Blue as the lake water itself, the wild hyacinths stretched for miles and glinted like pale water in the sun. The delicate, waving spikes of six-petaled, pale blue and lavender flowers, tufted with white stamens, stood tall above the grass-like leaves. It was May, and the wild hyacinths were all in bloom.

It was to these broad beds of hyacinths that the Indians came later in the summer to dig the succulent bulbs of what they called quamash, an important food plant.

Although the great beds of wild hyacinths vanished with the plowing of the prairie, stretches of the original prairie soil still remain along railroad right-of-ways, and here many hyacinths still are to be found. In patches like pale blue water, the slender, fluffy spikes of lavender-blue and white flowers nod in the prairie winds; the flowers may be fewer, but those which remain are unchanged from those which decorated the old prairie after the lakes departed, and were food for Indians who gathered them.



SWAMP SAXIFRAGE

Saxifraga pennsylvanica L.

May
Sandstone canyons,
swamps and bogs

In the sandstone canyon at Starved Rock there is a boggy spot, there where the drip from the cliff's moves down the slope and stops in that saturated place where the deep mosses grow and the swamp saxifrage blooms in spring. The sun spends only a short part of the day in the canyon; the walls are steep. Pines stand tall on the hill-top; harebells cling to the rocks, and blueberries with small white bells blossom in the May warmth.

In that boggy spot, the swamp saxifrage sends up its lettuce-green leaves. They grow in a broad rosette above the wet dark muck, shining pale green, long-oval tapered leaves with an infinite look of freshness. From the center spring up one or more stout, downy pale stems topped with a tight cluster of buds. Then in late May they open as tiny, greenish-white, five petaled, starry flowers with a slight fragrance. There in the hidden canyon where the soil of the canyon floor is a miniature bog, the swamp saxifrage blossoms and makes its seeds.

It is not common in Illinois. Its chosen haunt is not a common one in this prairie state. Yet there are those special, hidden places where a more northern habitat remains after it long ago left our territory. In the deep canyons of certain state park areas there are these relict plants, such as the white pines which by rights should have retreated northward at the proper time in post-glacial history. The swamp saxifrage, whose more common habitat is much further north and not in prairie country, is one of the plants remaining in secret spots in northern Illinois.



WILD COLUMBINE

Aquilegia canadensis L.

April - May
Roadsides, woods

Columbine is named for two birds—for Columba, the dove, from a fancied resemblance of the flower to five doves grouped in a circle, and for Aquila, the eagle, from some fancied resemblance of the flower to some part of the eagle. Almost as if they had wings, the flowers of the columbine are lightly poised on thin stems so that they dangle in graceful curves in the spring woods. No other flower can possibly be mistaken for columbine; there is only one species in Illinois, the one with coral-red and gold blossoms which come in May to feed the hummingbirds.

Columbine is one of the important hummingbird flowers. In these honey-horns the long beak and longer tongue of the hummer thrust deeply and garner nectar and any tiny insects which have been attracted there, too. Since hummingbirds seem to prefer red or orange flowers with trumpets, the columbine is peculiarly fitted for their requirements. In the hilly, sandy woods where columbine grows tall, there are almost always several hummingbirds flashing about on wings that whirl almost too fast to be seen. And usually, in one of the tall oaks, there may be a tiny nest where the little green female has laid two white eggs no bigger than navy beans. And as often as not, the woods which support the deep rooted, perennial columbine may, in summer, have the shallow-rooted juicy-stemmed, annual jewelweed which is orange and red and trumpeted, to feed the hummingbirds when columbine is out of bloom.

Columbine has a basal tuft of deeply lobed, grey-green leaves from which rise the tall, fibrous flower stems with leaves in groups along it; the flowers on thin stems spring from the top and axils of the leaves.



WILD STRAWBERRY

Fragaria virginiana Duch.

May
Roadsides, hills

This is June in Illinois: sunshine, clover blossoms, song. It is the time when the new strength which comes to the sunshine begins to bake the soil between rows of growing corn, when soft dust powders up in the road, and the river's level nightly falls. It is the time when pink wild roses blossom fleetingly along the railroad tracks; when the morning knows a stream of blue spiderwort in bloom beside the road. June is the renewed sound of insects in the grass, in the air, in the sunshine, in the night—a humming, churring, buzzing, zinging, clicking, that swells to a crescendo as the warmth increases.

And now June is strawberries. Now the scent of ripe wild prairie strawberries fills the warm air of the sunny roadside. Here are wild strawberries, clover, wheat; they are part of one picture, June. The berries are small, sweet, ruby fruits in clusters on long stems; you pick a stem-full and fill your hand with berries. And a meadowlark on a fence-post turns his golden bosom with the bright black V to the sun and sings and sings and sings.

The wild strawberries are one of the choice wild fruits of Illinois. There is nothing quite like them, either in aroma or in flavor, and these prairie fruits are among the sweetest and most delicious of all berries, either to eat on the spot or to take home to make into preserves.

In May, the compact plants sent up flower stalks with the bright white blossoms with their five petals around a staminy center. Quickly, the petals fall and the berries develop and ripen when June once more fulfills its ancient position in the cycle of the year.



DWARF FALSE DANDELION

Krigia biflora (Walt.) Blake

May - June Dwarf false dandelion is a neat, smooth, compact little
Rocky ravines plant with little of the weedy quality which the common dandelion often has, *Krigia*, in fact, is not in the dandelion family, even though it is a Composite, but is more closely related to chickory and hawkbit.

In a rocky glen below a plowed field, a place where stones cling to the slopes or move downward through the annual activity of water and wind and freezing and thawing, the taproots of dwarf false dandelion go deeply into the soil in search of food and water. The leaves are mostly basal, smooth, tapered, light blue-green with a pinkish midrib. Often on a flower stem there is a clasping or almost perfoliate leaf a few inches above the base, but most of the slim, smooth flower stems are without leaves. The stems curve, wave in the summer wind that blows down the stony ravine. In the blaze of sunshine they stand tall with a single flower, or two or three, seldom more.

The flowers are an inch broad with rectangular yellow rays and a tufted center of staminate and pistillate flowers. It is a delicate blossom on a delicate stem, a plant which seems more at home in shady woods than out there on the stony slopes in the full heat of the June sunshine.

The Carolina dwarf dandelion (*Krigia virginica*) is shorter than the above and grows as an annual plant on open sandy fields, principally along the larger rivers. It has a small rosette similar to the common dandelion, from which spring several slender stems, each of which bears a head of yellow strap-shaped flowers.



BUR-REED

Sparganium eurycarpum Engelm.

May - June
Swamps, ponds

In that not-quite-wet and not-quite-dry environment of the swamp and the swampy edges of ponds and streams, the bur-reed grows. Most of the time it is not conspicuous, but twice during the year it merits attention. In April the flower spikes thrust from the angled, dark green stems with their clasping, narrow leaves. The flower stalks are composed of round clusters of stamens and pistils, the former fluffier and yellower than the latter. The stem holds tight green buds, half opened flower balls, wide open flowers, and flowers whose parts have fallen away to show seeds beginning to form.

The seed time is the second attention-getting period in the inconspicuous life of the bur reed on the swampy shore. Now the one-time flower spikes are seed spikes; each is studded with several globular green fruiting clusters radiating individual seed spikes. The seed head is shaped much like that of the sweet gum tree.

The time of the flowering of bur-reed in the grassy swamp beside the river is the time when the redwinged blackbirds are back in the marsh. The redwings carol and teeter and flash their brilliant scarlet and gold shoulders, spread their glossy black tails and seem almost to force out the song which spills over the marsh. The period between the blossoming of the bur-reed and the seed time in June sees the redwings building nests in cattails or low willows, and by the time the green fruit heads have formed on the bur-reeds, there are young redwings fussing in the nests. As the hot summer comes on, the bur-reed seeds ripen and turn brown on the stalks, and the young redwings are grown and come to feed in the sunny summer marsh.



GLAUCOUS HONEYSUCKLE

Lonicera proliifera (Kirchn.) Rehd.

May - June Now in the hilly woods, there on the north slope where the
Hilly woods banks of moss are bright green and a ledge of sandstone is always moist from a perpetual drip coming out of the hillside, the pale flowers of glaucous honeysuckle bloom.

The vines are tangled and festooned over a bush, over the ground, over the ledges. The lower parts of the vines are woody, the new growth pale green and tender, there in the shady woods, with oval, blue-green, smooth leaves in clasping pairs. Often the lowermost leaves do not clasp, but the majority of them appear to be one leaf with the stem piercing the center—perfoliate leaves. Several of the wild honeysuckles have this characteristic, the glaucous honeysuckle perhaps most noticeable of all.

In this species the topmost leaves have merged and appear as one circular disk, from the center of which springs a thin, pale stalk on which are the long narrow buds. These open as pale yellow, tubular flowers with curling petals and protruding stamens. As each flower grows older, it darkens in color to a dull orange hue before it falls away from the stem.

At last all the flowers have fallen and in their place is a stalk of growing green fruits which, later in the season, turn scarlet and juicy, and then are eaten by robins.

The glaucous honeysuckle and coral honeysuckle (*Lonicera sempervirens*) are the two common native members of this family to be found in Illinois woods.

Two foreign honeysuckles have made their homes in Illinois. In the southern part of the state the twining stems and yellow flowers of the Japanese honeysuckle (*Lonicera japonica*), cover many roadside fences.



ELLISIA (Wild Tomato. Nyctelea)

Ellisia nyctelea L.

May - June It is mid-May when the Ellisia blooms. Mid-May, and the
Deep woods warbler migration is passing its peak. There already are young robins out of the April nests, and orioles are building in the elms. High spring, almost the end of May, almost June. For the first time in many months the woods are deeply shaded. This discourages the growth of many plants, but a few, like the little Ellisia, seem not to require much sunlight.

Now when the once neat floor of the woods grows dense with greenery, there come the little tattered, weak-kneed plants of the Ellisia, or nyctelea. Insignificant, inconspicuous, not at all exciting, the little Ellisia spreads its watery little, deeply cut leaves with their widely scattered long hairs and weak, watery stems. It is prostrate on the ground or leans for support against sturdier plants, and opens a few little buds.

The flowers are palest lavender-pink or white with five petals, and remind one somewhat of the lesser wild geraniums. The calyx is large and almost engulfs the flower. When this is past and the seed forms, the calyx remains as a saucer beneath the double green fruit. This is the little "wild tomato" which gives the Ellisia its commonest name. The whole plant, perhaps, might be compared with the appearance of a weak tomato seedling in despair of its life.



PURPLE-STEMMED ANGELICA

Angelica atropurpurea L.

**May - June
Swamps**

Tall above the swamp stand the purple-mahogany stems of Angelica, a noble plant with an architectural beauty in the tubular stout stems and the broad clasping bases of the leaves and branches. There is an economy of growth which makes it seem that the Angelica plant has just enough leaves, just enough branches, just enough flowers. In the bright May sunshine, it spreads its blossoms; butterflies and many small flying insects are attracted to it all day long.

Angelica seems to need the abundant water of the swamp to nourish those stout purple stems; for the stems are large and thick and aromatic, a quality long known to mankind who has recognized Angelica as one of the choice flavorings of the world.

Candied Angelica stems are an old delicacy; angelica oil has long been a flavoring for a very special liqueur; and it has been an aromatic oil used in cordials and certain medicines. Its name was given long ago because of the "angelic" qualities of the plants and its superb flavor.

Angelica, for all its elegance, is one of the parsnips which all are aromatic is one way or another, have strong tap roots, usually stout stems (but not always) and clusters of small white, greenish, or yellow flowers in umbels at the tops of the stems. All the parsnips vary considerably in the fruits they produce—"seeds" which may superficially seem almost alike, yet it is in these that the botanists find differences to set off species from species. In the Angelica, the fruit is dry, small flattened, with three deeply set ribs marking down each side. The fruits are held in the same formation as the flower head.



YELLOW PIMPERNEL

Taenidia integerrima (L.) Drude

May

Hilly, dry woods

In May there comes a thin, tenuous, delicate plant to the dry, wooded hillsides. It is a graceful plant whose long taproot apparently goes endlessly into the gravelly clay soil of the oak hill. Now in May when the migrating warblers swarm through the new-leaved oaks, the yellow pimpernel is in bloom.

Despite its name, the yellow pimpernel actually is a member of the parsnip family, but in contrast to that usually lusty tribe, the pimpernel is a graceful, slender, airy plant. Its foliage often reminds one of the appearance and manner of growth of the royal fern (*Osmunda regalis*). But the flower clusters reveal the plant's true lineage. In these tiny yellow flowers which are borne in sparse heads in a spreading, airy umbel, one sees that they are typically parsnip flowers. They are graceful enough, however, for occasional flower-gatherers to pick a few for a bouquet, to the pickers' chagrin and disgust when the charming little blossoms with their neat foliage promptly wilt down into an unreviving mass of limp greenery.

The yellow pimpernel belongs there in the gravelly hillside woods, deep under the oak shade, where the often barren slopes are covered with the pleasant greenery of its leaves and the faint perfume of its flowers. Above in the oaks the redstarts flit and call. The tiny bright birds from the South American jungles will nest nearby in some inaccessible oak top, and may flit down, down, down, branch by branch and twig by twig, to daintily pick gnats from the air above the pimpernels.



GOLDEN-ALEXANDERS (Early Meadow Parsnip)

Zizia aurea (L.) Koch

May - June

Roadsides, thin woods

Once upon a time there was a German botanist who lived along the Rhine. His name was Professor Ziz, and a good while later a certain member of the parsley family, far off in America, was named *Zizia* in his honor. Botanists whose names in most other ways have been forgotten thus have been perpetuated by means of their plant namesakes. Frequently they are plants which the defunct botanists never saw and with which they had not the remotest connection.

It is possible, though, that in the sunny meadows along the Rhine there were yellow flowers which bloomed in late May and marked an end to early spring flowers and introduced summer to the land. For the early meadow parsnip, or golden-alexanders, is among the earliest of the parsnips to bloom. As if in deference to the youngness and grace of the season, golden-alexanders is not large and coarse as so many of its family are. It is a pleasant bright green plant of medium growth—two feet or a little more—with spreading branches and smooth stems and leaves. The leaves are irregularly shaped; some of the leaflets are lobed, some are entire; all are very finely saw-toothed and bright green.

In May—there in the sunny woods or in the moist meadows—the early meadow parsnip holds erect its graceful umbels of bright golden, tiny flowers. The separate heads of the flowers in the umbel spread on thin stems; the whole umbel is a bouquet.



WILD SARSAPARILLA

Aralia nudicaulis L.

May
Hilly woods

When mid-May is here and the settled feeling of early summer has come to the woods—when the trees all have their leaves and once again there is unaccustomed deep shade, and the birds which nest here have all arrived—the wild sarsaparilla blooms. Its leaves stand on stiff stems two feet or so above the forest floor. Each stem branches three times as compound oval leaves. The plant looks something like the ginseng, but on examination it has great differences. Now one of those differences, the flower stalk rising separately from the stem, stands almost half as tall as the plant and branches three directions. On each of the three forks there is a round cluster of small greenish-yellow flowers with protruding stamens. For a little while, the sarsaparilla blooms, and then the little flowers fall away and by June there are tiny green fruits where the flowers grew. By this time the woods are growing weedy and deeply shadowed; the red-eyed vireo sings all day, no matter how hot, and the wood thrush is nesting in an oak.

By late summer and early autumn the *Aralia* has a cluster of deep maroon fruits which resemble elderberries, but are not as soft as the latter. Robins often eat them.

Meanwhile the leaves have ripened and sent their food into the fleshy roots down in the woods earth. They are stout roots which are aromatic and spicy; they frequently have been used as a substitute for the true sarsaparilla, a tropical *Smilax*.



BITTERSWEET (Waxwork)

Celastrus scandens L.

May

Bottomland woods.

sand woods, roadsides

The bittersweet vines have a way of draping themselves all over the trees and bushes of their chosen sandy woods, yet they remain conspicuous during most of the year. The

flowers are produced in long clusters of five-petaled blossoms, the staminate on one vine, the pistillate on another, the latter fertilized by pollen carried by insects from the staminate blossoms. Staminate vines never bear fruit even though they may flower abundantly.

All summer the dark green leaves of the bittersweet vines conceal the growing clusters of green fruits. The woody vines grow a little longer, twine a little more firmly around trees and bushes, and advance toward autumn ripening. They do this inconspicuously as the corky layer forms between leaf and stem where the leaf joins the woody part. This does not permit water to enter the leaf while plant starches in it are changed to sugar and are carried away to be stored in the woody stem and roots. Now as September comes, the bittersweet leaves grow pale green, translucent green-yellow, and they drop easily from the vines. A frost brings them down in a sudden shower.

Now the woody vines are brilliant with great masses of orange seeds. The yellow-orange seed-pods split three ways to reveal seeds enclosed in orange-scarlet, wrinkled flesh.

Bittersweet in autumn is eagerly gathered by people who come to the woods and sometimes unwisely tear down old vines which will require many years to reach their former abundant fruiting. Fruits which remain are even more eagerly garnered by cardinals and late robins and others which live during the winter in Illinois woods.



SMOOTH SUMAC

Rhus glabra L.

May

Hillsides, open woods

In a family which contains such widely different plants as poison ivy and cashew nuts, one finds the sumac well established as important small trees in the Illinois woods.

The sumacs in winter have little of the appearance of proper trees because the leaves fall completely away and leave the stout branches of the shrubby sumac startlingly bare and unbranching. They are club-shaped and stiff without fine twigs; the winter buds are embedded above the leaf scars. Then when spring comes, the crumpled little compound leaves develop rapidly from the tiny buds, expand, stretch, elongate, until they are fifteen to eighteen inches long, compound with many toothed, narrow leaflets, and attached in a great whorl at the top of each woody stem.

It is here, from this crown, that the flower buds form and in June burst into a large panicle of greenish-yellow flowers. These are tiny and five-parted, and later are replaced by a large tight cluster of green seeds which turn carmine-pink in autumn. They are covered with fine hairs containing malic acid; this quality permits the fruits to be used in making a refreshing drink reminiscent of lemonade. In the past, the tannin in the boiled berries was used to make a medicinal drink to relieve sore throat; tannin extracted from fruits, stems, dried leaves, and roots has been used extensively in the past in tanning and dyeing.



KITTEN-TAILS

Synthyris bullii (Eaton) Heller

April - May
Sandy woods

In the botanical zoo there are cattails, pussy toes, mouse-ear, mouse tail, rat-tailed plantain, and this—kitten-tails. And the softness and pliability of the flowering stalks of *Synthyris* perhaps make it a logical name for a little-known plant.

It is a curious plant of the oak barrens and sand country, one which is never common nor is particularly beautiful, yet somehow because of its very rarity and its strange form and name, it is exciting to the amateur botanist to find a plant or two.

Synthyris seldom grows more than eight inches tall in the May sunshine. There are large, thick, heart-shaped, finely scalloped basal leaves covered with soft down and hairs. From the middle of the plant spring two or three stout, downy stems with small, stemless, clasping leaves, and flower buds which are arranged with as much order as the scales of a pine cone. The buds open to become greenish-yellow flowers with protruding, plump yellow stamens, and are somewhat fragrant.

There in the sandy woods where the hummingbirds busily whirl to the scarlet and gold columbine flowers, and when the bright purple of wild larkspur is all about, and there are tanagers in the tress, the inconspicuous greenish-yellow flowers and lowly plant of kitten-tails nevertheless plays a part. It is not gaudy, but it is an item in springtime as it is expressed in the pattern of the wooded sand country, part of the picture of the oak barrens, the sandy woods near the Illinois River.



APPENDAGED WATERLEAF

Hydrophyllum appendiculatum Michx.

May

Ravines, woods

The canyon between the wet sandstone cliffs is cool and quiet and damp. The sunlight now, long withheld from the bottom of the canyon because of the steep walls, at last slants down through the oaks on the hilltop to thrust through the last of the night's mists. The little stream makes noises around the wet stones. A water thrush teeters and steps from stone to stone and picks up insect morsels. And on the cliff-side, in a little cranny, a phoebe has built a new nest. The nest, snug under a ledge, is neatly upholstered with live green knight's plume moss and pale lichens. There are four white eggs in the nest, and the phoebe sits on them now, her eyes bright as the sunlight comes into the canyon.

Below her on the wet slopes the waterleaf flowers are in bloom. They are as pale blue as lake water, shallow-cupped bells with stamens purple-tipped, and are gathered in loose clusters on fine-hairy stems. The stems stand above the broad, five-parted thin leaves, leaves which are thin and watery in this canyon country of coolness and shade and moisture. The waterleaf is in bloom, and the spiderwebs spun among them during the night glint now with illuminated drops of dew.

Then a web is shattered by a quickly flashing wing as the phoebe darts down and snatches a flying moth just as it enters a waterleaf flower. The plants quiver and the dew drops fall off, and the sunshine comes more splendidly into the canyon, to shine through the translucent, silky petals of the lavender-blue flowers. It is mid-May. The phoebes are nesting. Waterleaf is in bloom and once again the year's pattern of flowers is completed by one more species to fulfill the cycle of the year.



VIRGINIA WATERLEAF

Hydrophyllum virginianum L.

May - June

Deep woods, ravines

Late May and early June in the deep woods is a time of comparatively few flowers. The time of profuse flowering in the shaded places has passed and bloom is at its best in the fields and uplands. Bright bloom, sturdy plants at home in the hot summer sun, these belong to summer. But back in the cool, damp woods the waterleaf is blossoming. It might be called the last of the true spring flowers. Here is delicacy, a plant which wilts quickly in open sun.

The plant of Virginia waterleaf is stiff, with grooved stems which hold erect the clusters of deeply pleated buds on their densely hairy little stalks. The flowers are five-parted, narrow bells with long, protruding hairy stamens—their pollen reaches the incoming bee even before it gets there. The color ranges from white to pale pink and greyed lavender. The Virginia waterleaf is visited by large bees; apparently the formation of the flowers prevents other insects from taking nectar when they are unfitted to transport waterleaf pollen to other waterleaf plants.

The leaves are compound, deeply sharp-toothed, dark green and veiny, and remain green in the shadowed woods all summer long. The fuzzy seeds form in early summer and are scattered to the ground where, if there have been rains enough to moisten the soil, the seeds begin to grow.



ALUMROOT

Heuchera richardsonii R. Br.

May - June
Wooded hills

Many an alumroot plant has been hopefully transplanted to many a garden, only to leave the gardener disillusioned when May comes around again and the alumroot blooms. For the cluster of basal leaves of the alumroot is ornamental and promising. It would seem that certainly a beautiful flower would belong with such a handsome plant; besides the leaves look almost exactly like those of coral bells in the catalogs and gardens.

Alumroot is related to coral bells, but the long, thin spikes of stems, which rise from the leaf-tuft, blossom out in nothing so fine as coral-like flowers. Here are dull, greenish-brown blossoms, remotely bell-like, with orange anthers thrusting out on green filaments. The cluster of flowers in itself is a decorative grouping, except when aphids have attached themselves and spoiled any beauty it might have. But the color is undeniably dull and unattractive. Thus the alumroot blossoms each May and is usually unadmired for its flowers; the scalloped, round, hairy leaves, arranged in a broad cluster at the base of the plant, are always handsome throughout the growing season.

Alumroot is fairly common in dry woods, usually on slopes, with wild blue phlox, mayapples, and other typical May blossoms of the Illinois oak woods.



WATER CRESS

Nasturtium officinale R. Br.

May - June

Springs, ponds, swamps

The spring runs clear and cold from the sandy hillside and has cut itself a channel between the slopes before it finally flows as a little stream into the swamp beyond. The spring runs clear and fast over the clean-washed brown sand. Unlike other streams of Illinois which almost invariably are muddy and thick, the spring is clean and pure. In it, therefore, as an indication of clarity and purity and motion, grow beds of water cress.

The bright green little leaves on their matted stems cluster thickly in dense beds, all with their roots and stems in the water and the leaves in the sunlight, and the flower stalks with white blossoms held higher still. Down among the cool leaves sit dozens of little white-bellied cricket frogs, and on the spring evenings their pipings from the water cress beds are loud and long and happy, all the soft night through. Small transparent copepods, minute crustaceans, live among the cress roots or climb up into the leafage at water line. Sometimes one of the big yellow and brown bull snakes from the nearby swamp comes into the water cress beds to have a meal of small frogs. Sometimes the coots come pushing in here, like unmannerly tugboats, dabbling and bobbing about and shoving themselves hastily through the tangle of green leaves, hunting for tasty little copepods and other morsels to eat.

Sometimes, too, people come here with knives and baskets to cut a mess of water cress for the table or for the market, for these pungent little green leaves which grow in spring water are much liked in salads. They give a certain pleasant pepperiness to the dullest of lettuces, spark up any salad, are a delight in the most ordinary sandwich.



GOLDEN CORYDALIS

Corydalis flavula (Raf.) DC.

May
Sandy roadsides

In the sand country grows the golden corydalis with its leaves which remind one of those of dutchman's breeches, and flowers which belong to the corydalis alone. Pure, bright yellow and highly ornamental in their shape, winged and crested and lipped and puffed, the flowers of golden corydalis suddenly take the flower-finder away from the realm of the common and the ordinary. The corydalis always has the look of something very special. Even though it is not especially rare, though localized in the sand country near the rivers, the golden corydalis gleams in the May sunshine and plays its own little part in the progress of the spring.

The leaves are finely cut and pale grey-green. Unlike the dutchman's breeches leaves, which they superficially resemble, the corydalis leaves do not spring separately with the flower stems from the root. The stems, instead, are branched and bear leaves along them, with the flowers in curving racemes at the top. Delicate, poised on thin little stems, the corydalis flowers come and go, and the prairie horned lark which leaves its tracks in the sand field rears its young in a nest in the clump of bluestem grass close by. When the young are out of the nest, they may come walking that way and pick at the little thin seed-pods of the corydalis, and eat the small seeds that ripen there.



SENECA SNAKEROOT

Polygala senega L.

May Woods Senega Root, it was called in the early days of our country, when the pioneers pushing west of the Alleghenies sought plants for home remedies to cure all the ailments besetting mankind. It was believed faithfully by many that there was a plant which would cure each disease, if the right one could be found to treat the disease in question. Polygala, or Seneca snakeroot, was one whose hard, knotty rootstock was gathered and used medicinally in many a home on the Illinois prairie.

The Polygalas were given their name, which means "much milk", in the belief that cows which ate the plants produced more milk. The name originally came from that given by the old botanist of Greece, Dioscorides, who labored under many current delusions of the day but sought earnestly to learn the truth about Nature and its manifestations.

The Polygalas are among the most varied flower clans to be found. Not an extensive group—eight species are listed in Jones's *Flora of Illinois*—they nevertheless range from extremely showy flowers to some which are dull, small, and uninteresting. Most beautiful of all and one of the most exquisite of wild flowers is the fringed polygala or gaywings; it is believed to be entirely absent from Illinois, but is common in late spring in northern forests.

In extreme contrast are the thin, sparsely flowered spikes of Seneca snakeroot, with tiny greenish white flowers and small, narrow leaves.



GREATER TWAYBLADE

Liparis lilifolia (L.) Rich.

May - June

Deep, wooded ravines

The wooded ravine between the sandy hills is shady and moist in May. The new leaves on the oaks are dense now and bring shade which for many months has been absent from the woodlands. Ferns uncurl and grow tall. Nettles are developing stiff stinging hairs. The grosbeak is nesting in the tangle of bittersweet and the towhees have a nest with young on the ground beneath the ferns. At the bottom of the ravine a little rivulet, dry in mid-summer, still runs rapidly over the shaly stones, and drops down in a series of tiny waterfalls to the lower levels where the water thrush teeters and sings.

In this quiet, secluded, moist spot in an Illinois ravine, there springs into being an orchid. From its two perfect, pale green, cupping leaves just above the ground there is a stout, glossy stem thickly set with buds. These, as the days pass, extend themselves, each on its own stalk, at angles from the stem, and the lowest buds at last open into a strange, ornamental blossom which could be nothing less than an orchid. Magnified in size, it might be a strange tropical species in a Brazilian jungle. But this is the greater twayblade in an Illinois woods.

The flowers are broadly lipped, silky maroon creations of form and color, with dangling, greenish and ruddy petals and honey tubes. There in the ravine the twayblade contains in itself something of an aloof personality which sets it apart from all other plants growing there. This, it says, is an orchid, a rare, beautiful, intricate mechanism.



LOESEL'S TWAYBLADE

Liparis loeselii (L.) Rich.

May

Woods, thickets, swamps

At about the time when greater twayblades bloom, a kindred species, Loesel's twayblade, also comes into bloom in swamps and damp thickets. The flower, however, is smaller and is yellow-green, and the shining leaves are arranged along the erect stalk. The plant has that "look of orchids" but is less conspicuous and less dramatic than the greater twayblade with its magnificent simplicity and its simple magnificence.

Illinois is not often recognized as an orchid-growing state, yet there are at least thirty-three species of the Orchid family to be found in Illinois. A new one for the state, crested coralroot (*Hexalectris spicata*) was discovered in 1949 by Dr. Glen S. Winterringer, assistant botanist at the Illinois State Museum, during field work in southern Illinois. On any field trip another new orchid may be found. But so inconspicuous are some of our orchids that they may be easily missed even by the experienced botanical eye, or may be calmly devoured by cows, just as the pink mocassin is devoured by deer in the northern wilderness.

Loesel's twayblade has a single stalk of inconspicuous flowers which rises from a pair of pale green, glossy leaves clasping the stem.



LONG-BRACTED ORCHID

Habenaria bracteata (Muhl.) R. Br.

May - June Woods

There are comparatively few orchids in Illinois; it is not the proper habitat for most of them, some of which live only in cool, acid, sphagnum bogs, some in coniferous swamps, or in other intensely acid, cold soil. At one time, long ago before the landscape of Illinois was changed by plowing, overgrazing of forest-land, drainage of water courses, and other man-made influences, there were far more wild orchids. Some of these in a few remaining orchid-haunts still come up each spring and blossom and set their seeds in the ancient manner of the tribe.

The long-bracted orchid does not have that colorful elegance of the lady's slippers and fringed orchids. It has, however, in its small individual flowers, the same intricate and curious mechanism and closely held form which all orchids possess. Yet as the plant grows in the damp woods or in a thicket, it is so green throughout that it may be overlooked by all but the most experienced orchid hunter.

The long-bracted orchid has a spike of green flowers with a long green bract extending outward below each flower. The leaves are few; they clasp the stout stem; they are smooth, pale green, glossy.

It is a plant whose range is wide and varied. The same species which grows in a certain Illinois woods also grows in a similar habitat from Nova Scotia to Alaska and south to Washington, Minnesota, and Pennsylvania, and along the Appalachian mountains to the Smokies in North Carolina. And in the same sort of haunt, the same species of wild orchid grows in damp woods and thickets in China and Japan.



WHITE LADY'S SLIPPER

Cypripedium candidum Muhl.

May - June

Swamps, prairies.

along railroad tracks

There was an Indian village in the distance, a rising dune to the east, and beyond lay Lake Michigan. Between the low dune and the village on higher ground lay the broad expanse of wet prairie which once was so much a part of the landscape around the lake. The wet prairie in the days of the Indians was splendid in spring and summer with brilliant flowers, and in May there came the time of white lady's slippers. They were everywhere on that Calumet prairie, everywhere for miles, it seemed; their stiff green stalks with the closely-held hairy leaves bore one or two flowers on each; there were millions of them.

The white lady's slipper has a small, white, pouch-like flower with green-purple sepals and petals extending outward and over it. Inside the white pouch are purple speckles, and the interior mechanism, like those of the other lady's slippers, admits only certain tiny green bees which for ages have fertilized American lady's slippers. Stiff and exquisite on the old prairie, the white lady's slippers blossomed and were gone. And were gone. . . . not for the summer, but almost for good.

Where lady's slippers grew for miles on the Calumet prairie there now are steel mills and factories, dirty streets and dirty houses, and air thick with smoke and fumes. It is far from the sweet peace of the wet prairie where white orchids bloomed. But this species apparently has suffered less extermination than the other lady's slippers in Illinois, for there still are many places where the conditions are right, often along railroad embankments and ditches, where a few white lady's slippers still blossom as part of the picture of late spring.



YELLOW LADY'S SLIPPER (Whip-poor-will's Shoe)

Cypripedium parviflorum Salisb.

May - June Woods Late May, and bright yellow orchids, the yellow lady's slippers, are in bloom here and there in some of the occasional Illinois woods which still support such opulent flowers. Long ago they were far more abundant, but an orchid cannot be safely picked nor its woods pastured; it is fairly easy to bring about extermination of wild orchids in Illinois, and this already has taken place in certain species. Others are so rare that to find one is a high-lighted event of the year. On such an occasion, the splendid discovery should be left to remain in those favored woods where it can make seeds to increase the supply.

Yellow lady's slipper—whip-poor-will's shoe—is like a bright yellow Indian moccasin with twisted, red-brown ties which stand outward from the flower, with a red-brown, twisted petal high over the slipper. It is a delightful contrast in colors, and the form of the flower is superb. The broad, parallel-veined, yellow-green leaves are few on the straight stem, and accent the exotic shape of the flower.

Yellow lady's slippers live in hilly, often rocky, woods. They require shade enough, but with sunshine filtering through the high oak leaves. In the rich leaf mold of the oak-acid forest floor, the rootstocks grow and each year send up a new shoot until often quite a group of lady's slippers stands in the sunshine. Pioneer children knew them and ruthlessly picked them; botany classes in the past gathered them; young ladies on a picnic gaily took home an armload of glistening golden wild orchids. Woods were cut and pastured. The rich leaf mold washed away. The lady's slippers decreased in numbers . . . but still in rare spots in Illinois a few remain and blossom in May.



SHOWY LADY'S SLIPPER (Queen Orchid)

Cypripedium reginae Walt.

June

Swamps, bogs

Showy lady's slipper is the Queen Orchid of America. Here is an orchid blossom as exciting to see as one from the southern jungles. Here is crisp, waxen perfection, a minimum of leaves placed exactly right for proper symmetry. Alternately they clasp the furry stem—broadly oval, bright green leaves with parallel veins. From the protection of the topmost clasping leaf there is a white bud which is shaped much like a dove's egg. The bud grows, and swells, and in silent drama opens to become a pouched white flower of great magnificence. Here is a slipper-like pouch marked with a splash of vivid purple-pink with white lines. Above are two spreading white petals and one large, broad petal curved above. A slight fragrance comes from the center of the flower. The sun gleams on the petals; they actually sparkle with tiny individual lights.

A small bee a fourth of an inch long fertilizes the orchid; other insects usually fail to get into the complex flower, are caught between the sticky anthers and are held there until they die. The bee knows the way in. It enters the opening in the front of the pouch and finds itself inside and heading up into the back part of the flower. Nectar clings to tiny hairs leading along converging purple lines. Then the bee finds itself near a convenient exit at the back of the flower, and, in pushing through, brushes against sticky pollen grains which cling to the bee's body. Then it goes to another orchid where the pollen reaches the waiting pistil. Ultimately, the seeds form and are dispersed to create other orchids in other Junes.



WILD IRIS (Blue Flag)

Iris shrevei Small

May - June
Swamps, ponds

By late May when the pond is full of the life and growth and song of almost-summer, the wild irises have come into bloom around the shores. The pond shore is a place of plant zones. The wettest of all is the open water where submerged water plants grow and ducks feed. In shallows the lotuses are coming up, and among them the great blue heron slowly walks, fishing. The wet swamp is where the cattails and bulrushes grow, and where the redwings and rails choose to nest. And then comes the wild iris zone, and the docks and persicarias on which the mallards feed in autumn. Beyond are the drier places where willows border the pond and the yellow warbler builds a neat nest among willow twigs.

Now in the iris zone the slim blue silk buds quiver and unfurl themselves with the coming of the sun. Dew dampens the spears of leaves. The pointed blue bud, as pure and perfect as the new day itself, opens quickly and its petals spread themselves to the sky and the sun. They are lavender-blue, deeper on the three veiny falls with their opalescent coverts and their yellow beards; paler on the three upright petals arching over the heart of the flower.

Now to the veiny guide lines on the falls there come the bees which push their way under the opal-colored coverts to reach nectar and pollen deep in the flower. As they push their way in, the stiff white stamens which arch under the coverts brush pollen onto the backs of the bees, and when they visit another iris, the pollen is transferred, and pollination is neatly effected.



WILD GARLIC

Allium canadense L.

May - June
Open hills, dry woods
along railroad tracks

There is no certain way in which to disguise an onion. Step on it; bruise it; pick it; smell it; eat it—it is all the same: onion.

And wild garlie is the same, only more so.

It has been used as a highly flavored morsel to add interest to food since the early prehistoric Indians of Illinois undoubtedly went out and gathered wild onions and wild garlic.

The name given to all the Onion-Garlic family—*Allium*—is the name by which the Romans knew it. They ate garlic, too, from the edge of the Pontine marshes and from the hills above the Tiber. Ever since, the onions have all been known officially as *Allium*. Linnaeus, who, two hundred years ago, was giving proper scientific names to all the plants in the world, could not improve on *Allium*.

Allium, the wild garlic, still grows wild abundantly throughout Illinois. It multiplies rapidly along roads and railroad tracks, as well as in meadows, in woods, and at the edges of fields. The bulbs are hairy, small, not deeply set, and are very pungently a member of the Onion family. The leaves are thin, tubular, garlic-flavored; so are the erect, wiry stems, topped with a cluster of garlic bulblets, and the buds which open into thin-stemmed, six-petaled, pale pink-lavender flowers. Wild garlic at its best is a pretty thing; at other stages it becomes a ragged and unattractive plant. It nevertheless at any stage announces to all that here is a morsel of wild garlic to add to a hiker's sandwich, that here is something brightly flavorful, but strong . . . it needs a good sandwich to temper its pungency.



SPIDERWORT (Spider Lily. Trinity Flower)

Tradescantia ohimensis Raf.

May - June

Roadsides, woods

In the great estate of Charles I in England there was a man named John Tradescant, the elder, who was in charge of all the king's gardens. He knew many flowers, but evidently he never saw a certain delicate blue-silk spiderwort flower opening in the dewy light of early morning. But it was Tradescant's name which Linnaeus long ago gave to the American spiderwort.

Today, when May comes, there is spiderwort in bloom in hilly woods and open hillslopes and along roads. When June comes to Illinois roadsides, the moist ditch just below railroad embankments is a water-blue band of sky color in the morning, but by noon the spiderwort flowers have faded away into a drop of purple ink and the flower stems curl down while the seeds form. Next morning more buds have opened and again the roadside is bordered with a mass of blue.

Spiderwort is a delicate flower of the sun. It needs sunshine, yet sunlight itself is too strong for those thin silk petals and they completely disintegrate and liquify by the middle of the day, sooner than that in extremely hot weather. The flowers are three-petaled with six long-furred stamens of deep purple-blue topped with bright yellow-orange, puffy anthers. The pistil is slim, thready and three-forked. The leaves spring from the joints and are tapering, narrow, and alternate on the stem.

The Virginia spiderwort (*Tradescantia virginiana*) is similar to the above, but has hairy leaves and larger flowers. Found throughout the state, *Tradescantia subaspera* has broader, hairy leaves. It is a woodland plant which is found in the southern half of the state.



HOP TREE (Wafer Ash)

Ptelea trifoliata L.

June

Wooded hills

There it is, a small tree with glossy, pungent leaves shaped much like those of poison ivy, a tree with a disagreeable odor and seeds which at first seem to resemble those of slippery elm. A small, not conspicuous tree—hop tree or wafer ash. It is related neither to the hops nor to the ashes, but belongs in the same family as the citrus fruits.

It is a curious sort of low tree. Only two members of its family—hop tree and prickly ash—live as natives in Illinois; the remainder of the family is Old World or native to the southern hemisphere.

Hop tree actually is a tall shrub which grows in hilly woods of Illinois. It is never too common, but it is not really rare. The glossy, three-parted leaves are bitter-aromatic, and are full of that characteristic odor of hops. The leaves have attained their full size, compound in groups of three, when the clusters of small greenish flowers, four or five parted with a protruding pistil and disagreeable odor, are in bloom. They are followed by a loose, large cluster of winged fruits which are elm-like in shape, a resemblance which is more striking later in the season when they dry and rattle in the winds of autumn and winter. Even in winter, the hop tree possesses its curious odor, for the downy stems when broken emit a marked scent reminiscent of tangles of hop vines quivering in the summer wind.

The botanical name, *Ptelea*, was given to the hop tree because of the elm-like shape of the seeds, for *Ptelea* is the Greek name for the elm.



SWEET CICELY

Osmorhiza longistylis (Torr.) DC.

May - June Woods

Earlier in those woods, the spring blossoms were everywhere in a carpet of spring beauties and anemones. Now as the procession of spring moved inexorably onward and April departed and May came on, the earliest flowers stopped blooming, formed seeds, and disappeared. In their place, the woods floor has become carpeted with greenery—greenery of the wild ginger and young nettles, the greenery of honewort and white asters, with the flowers of wild geranium and the last pale blossoms of the blue phlox, bleached almost white now and tenuous in the shade. The cardinals are nesting in the tangle of green brier festooned in a wahoo tree; a Carolina wren is nesting under an old stump; there are young squirrels up in the hollow of the elm; and in a broad-spreading sycamore there is a nest recently vacated by a family of great horned owls.

Below, in the shadowed greenery of the woods, the white froth of sweet cicely has come into bloom. It is late May and the sweet cicely, marking a certain point in a certain cycle, indicates that now indeed it is almost summer.

Sweet cicely is a member of the Parsley family and has, in common with so many members of that family, a pleasant, aromatic quality which gives it distinction. The soft, dark green, finely downy leaves when crushed have an odor of licorice or anise; so do the stems, and the roots are even more aromatic.

In late summer the seeds are ripe. These are among the brotherhood of stick-tights—long, dark, slightly curved fruits with recurved prickles which catch on anything which passes by, and in this way the seeds are transported to other places.



WHITE FALSE INDIGO

Baptisia leucantha T. & G.

May - June

Prairie roadsides, sands

In the days before amino compounds were discovered to produce pure dyes without the aid of plants, the world's supply of blue dyes came from several plants native to Africa and Asia. Indigo became a fortune-making crop plant. People who were fired with the knowledge that the indigo plantations of the south were bringing their owners great wealth, searched for other plants which also would give forth that priceless blue dye.

Of all the wild American plants which were examined and used to produce indigo dye, the white false indigos of several species were most satisfactory. But no fortune was made from those wild plants. The quality of the dye was poor, the plants were not abundant enough in the wild and they were not adaptable quickly to cultivation.

But the white false indigo plants still grow wild in America; they are fairly common in Illinois. In late May the tall and elegant spikes stand erect above the bushy plants. The spike of flowers, often from one to two feet tall and closely set with white, pea-shaped blossoms, is identified as far away as it can be seen; only the white false indigo in Illinois has that long wand of white blossoms, that loosely-leafy, bushy plant.

The plant is branched, smooth, with grey-green, oval, kid-skin leaflets arranged in trios over the stems. When the leaves, stems, flowers, or fruits are bruised or broken, the skin turns blue—the ancient characteristic which gave the false indigo its name and put it in the pages of American history.

White false indigo is found in sandy fields, on prairie slopes, upland pastures, and in the original prairie soil along railroad tracks.



PRAIRIE ANEMONE (Canada Anemone)

Anemone canadensis L.

May - June
Bottomlands.
 prairie roadsides

In late May when most of the delicate flowers of spring are past their blossoming time and the more robust flowers of summer are growing rapidly in the humid warmth of Illinois, the prairie or Canada anemones bloom. In their simple white blossoms held above dark green leaves, these anemones take one back into the vanished days of early spring where blossomed flowers with this same delicacy, this same tremulousness, in a breeze.

From the heavy alluvial soil of the river banks, there where the bottomland maples and elms give way to a clearing taken over later in the season by horseweeds and trumpet vines, there now may appear a neat bed of the dark green leaves, decorated with the fluttering white flowers of anemones. They are large enough to be used as a garden flower—sturdy of stem, ornamental of leaf, large of flower. These are show plants.

This is the largest of our local anemones. It may be found on remote river banks, or along a highway where the grassy embankment slopes up to a fence or down to a ditch, or in prairie soil. The anemones always are abundant wherever they grow. There either are none at all or there are dozens, hundreds.

Now in the bright sunshine of late May and early June, they decorate their chosen patch of prairie with some of the loveliest flowers of the year.



TALL ANEMONE

Anemone virginiana L.

June This is, perhaps, the stiffest and least beautiful of all the
Woods anemones. Yet because beauty is a comparative quality, the tall anemone might be called most beautiful of its tribe if the others were less ornamental than they are. In the mosaic of the leaf-pattern, in the tall, stiff, downy stems, in the small, green, downy star which is the flower—a star of petals enclosing a globe of pistils and stamens—there is a certain beauty which belongs to the Illinois woodlands in mid-June.

Now it is high summer, hot, humid, with long days and short warm nights a-sing with tree crickets and whip-poor-wills. There is a certain polished brown oak leaf over a little way in the leaf-strewn floor of the woods, where a whip-poor-will has laid two white eggs scrawled over with hieroglyphics of purple and grey and brown. All day the female whip-poor-will broods the eggs. Against the protective browns and greys of the woods floor, the bird is almost invisible, but when she flies up like a great moth, the stems of the tall anemones nearby are moved by the flutter of her wings.

A snail pauses a long time under the anemones. A box turtle moves slowly through the woods and pauses to scrape a hole in the loose earth in which to lay white eggs. Days come and nights come, and by and by it is July and the anemones are out of bloom. The stout leaves still stand and on the ends of the wiry stems are conical heads of compact seeds, waiting to ripen.



THIMBLEWEED

Anemone cylindrica Gray

June Woods Mid-June, and the canopy of leaves to shade the oak woods has grown dense and the lower strata has become shade-loving. Nothing which needs full sunshine will last long here, but the plants of the summer shade now come into their best development. Now on the rocky banks, often on the cool north slopes of wooded hills, the thimbleweed, one of the anemones, is in bloom.

Its leaves remind one of those of prairie anemone; they are almost alike, but perhaps not so deep a green because of the shade they need. From the top whorl of leaves rise long, slender, fibrous stems, and at the top of each, poised in beauty and the perfection of a simple flower, is a single blossom. It has five petals of greenish white, arranged around a central cone of pistils and stamens. When the petals drop away at last, this seed-cone remains and grows larger. Perhaps it might be called thimble-shaped—at least this is the thing which gave it its name.

Late in the autumn the thimbles of this woodland anemone burst apart and the cottony seeds and "packing" fly into the air. Next spring the fluff which remains may be picked up by a whirring hummingbird who will fly in a swift upward sweep to a horizontal branch of an oak. Here a miniature cottony nest is constructed of plant fluff and down, upholstered with spider webs and pale green lichens. The hummingbird and the thimbleweed—these are part of the summer woods.



SPOTTED JEWEL-WEED (Snapweed. Touch-Me-Not)

Impatiens biflora Walt.

Summer Bottomland woods

Like a bit of hand-wrought golden jewelry set with tiny rubies, the flower of the jewel-weed sparkles in the morning sunshine streaming through the arching woodland trees. In the heavy soil of the river bottomlands, there where the shade is dense most of the day and most of the summer, the woods are covered with waist-high jungles of jewel-weed. It is one of the most abundant plants of the bottomlands. Its smooth coolness is in direct contrast to the unpleasant prickly plants of the stinging nettle which grow with the jewel-weed in many of these lowland localities.

The jewel-weed is a frail watery plant with a translucent, jointed stem which pours forth mucilaginous, watery juice when cut or bruised. The plant branches abundantly to form a low bush with oval, scalloped leaves which wilt in hot sunshine or when picked. Among them are the small jewels which are the flowers. There is nothing else in the wild just like the jewel-weed flowers.

Spotted jewel-weed's blossom hangs like a pendant or an ear-drop from a slim stem which springs from the leaf-axil. The flower is pouched and has a curled-over "tail", the end of the trumpet in which a bit of nectar lies. This lures the hummingbirds which visit the jewel-weed patches all day long and thrust slender beaks into the dangling flowers to get the nectar. The seeds soon form. When they are ripe, the thin-skinned covering of the seed-pod splits, curls, and ejects the seeds into the woods. At the touch of a passerby, the seed-pod simply collapses with disconcerting suddenness.



INDIAN HEMP

Apocynum cannabinum L.

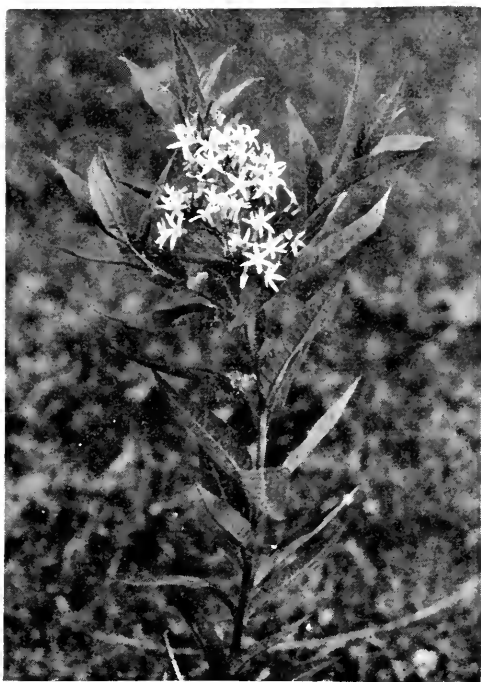
Summer

Bottomlands, sands

The Indian hemp, together with the smaller plant, spreading dogbane, is one of the slightly poisonous plants of America. It escapes being a menace to human life simply because there is little about the Indian hemp to invite a human being to eat it. But cattle, horses, and sheep occasionally eat either the dried or the green leaves and suffer ill effects from a toxic ingredient called cymarin.

Indian hemp, however, seems to cause little alarm among stock raisers. The plant seldom grows in pastures or other land where livestock are allowed to graze. In sandy country, bottomland fields and on beaches, the deep tap roots of Indian hemp firmly fix themselves. The pinkish stem branches, bears blue-green, oval, tapering leaves with a whitish or pinkish midrib, and the flowers at the tops of the stems are produced in clusters. The flowers are small, bell-shaped, with five spreading petal divisions, and are somewhat fragrant. In the late summer, autumn, and all through the winter, as long as the dead stalks stand, the long, bean-like pods of winged seeds remain. In the manner of milkweeds, the pods split and the seeds fluff out and fly away. The Indian hemp, in fact, is closely related to the milkweeds and has not only silky seeds but an acrid milky juice. Yellow warblers and goldfinches are among the birds which make use of the Indian hemp fluff in their nests.

The silky ravels of fibers which split away from the stalks also are used by birds for their nests. In the past, these strong fibers were used for cordage by Indians of the region.



WILLOW AMSONIA

Amsonia tabernaemontana Walt.

Summer Bottomlands

Tall, rather weedy-looking as a plant, with narrow, willow-like leaves, the Amsonia stands in the river-bottom pasture or in the waste land where no crops are planted because of annual floods. The Amsonia is a plant of the river bottomlands, one with *Clematis pitcheri* and the trumpet creeper, the nests of field sparrows and indigo buntings, the songs of the yellowthroat, and the imminence of the river which, in a rainy summer, may flood again.

The flower cluster of willow Amsonia is a surprise when one finds it for the first time. Instead of a milkweed flower, which the milky juice of the plant might lead one to suspect, or instead of a nondescript flower such as the weediness of the plant might suggest, here is a delicate cluster of star-shaped, pale porcelain blue flowers with a slight fragrance. Some of the flowers are five-petaled, others six, tubular, paler in the throat and darker on the outside of the tube. The silk-tufted seeds are packed into a long, narrow seed pod much like that of Indian hemp, in which family the Amsonia is found.

Willow amsonia is a plant more commonly found in the middle west and southwest than in the east, yet its name is derived from that of Dr. Amson, a physician of Gloucester, Virginia, in 1760, who was a friend of the botanist, John Clayton. Linnaeus, in searching for enough names to go around to all the plants in the New World as well as the old, used Dr. Amson's name to designate the pale blue blossoms of willow Amsonia in an Illinois river bottomland.



LEATHER-FLOWER

Clematis pitcheri T. & G.

Summer

Bottomlands

In June when it is high summer in the river-bottom country, there blooms a strange flower along fences and in tangles on slopes. Leather-flower is a clematis and is one of the typical flowers of the river lowlands of Illinois.

Bell-shaped, the flower is entirely unlike the usual garden clematis which is often bright purple with four to six spreading petals, or is small and white in a great fragrant mass in autumn. The wild Illinois clematis is bell-shaped and thick and stout, on short, stiff stems. The bell shades from a bright rose-purple with a silvery glint to pale silvery green where the bell splits into four spreading petal divisions. Inside, the flower is completely filled with stamens. The fruits are at the end of long curving "tails" covered with short silky hairs.

Leather-flower grows as a low, sprawling vine with a fibrous stem and many side branches bearing tapered or lobed, stiff leaves. It is so unlike any other Illinois wild flower that attention is immediately attracted to its strange, thick, purple and green bells and its compact and interesting vine. It is actually a western wild flower whose eastern boundary is Indiana. It goes west into Nebraska and south to Texas, but in Illinois it brings a flavor of the southwest to the steamy, weedy, river bottoms when June has come and midsummer is at hand.

The Virgin's bower (*Clematis virginiana*) is covered with white blossoms as its vines twine over fences and shrubs in moist woods or along streams in July and August. The opposite leaves are three-parted and their long petioles twine about their supports. Later in the summer the long feathery styles give the fruit a very striking appearance. This attractive climber is limited to the northern half of the state.



WOOD LILY

Lilium umbellatum Pursh

June - July Woods

Stiff and straight with its simple, concise stalk and its whorls of leaves, the wood lily suddenly puts cups of flame in the shadows of the summer woods. Unlike the downward-hung bells of the Turk's cap or the yellow Canada lily, the wood lily faces its red-orange cups to the shafts of sunshine coming into the woods of June. Blindingly, the morning sun strikes that vivid blossom, and the light rays bounce off the brilliance so that the flower almost seems to hold an aura of light around it.

Narrowly, the six red-orange petals taper to join the base of the flower where the stiff, upright stamens and the three-cleft pistil stand erect. There are a few spots of purple scattered purposefully on the bright yellow splash of color on the lower part of the petals. This is the flower and its dramatic power, its few and precise accents which make of the lily a splendid creature to discover in the woods.

The wood lily is rare in Illinois, but occasionally it is found in dry oak woods of northern Illinois—a few here and there, standing on two-foot stems, unbranched, with one flower at the top. There is one flower to make seeds. Then the purpose of the lily for that year is finished. One flower, one seed-pod, one stalk, one blub. A blazing lily is in bloom.



TURK'S CAP LILY (Wild Tiger Lily)

Lilium michiganense Farw.

June - July Woods In late June, when the growing season in Illinois begins to get slightly out of hand, burgeons into weediness and too many grasshoppers, develops lush growth in the long hot days and short, steamy nights, there comes a flower which returns to the more chaste and restrained mode of growth to be found in spring-time. Although the Turk's cap lily grows often three to five feet high, it never looks weedy. It possesses neat whorls of tapering leaves hugging the stiff stem, holds to the dignity and simplicity of a lily.

In the shady woods or in open sunny glades which once were woods before the oaks were cut away, the Turk's cap lilies bloom. The plants are inconspicuous until they bloom; there is so much else, usually, growing around them, that the lily-form of the stalks is not at once noticeable. But on a June day there suddenly are pendent apricot-yellow buds shading to deep orange-rose. Each opens regally into six stiff, waxen, pink-orange petals which curl back tightly while the six stamens hang in a group below—stamens whose filaments are pale apricot-pink tipped with pollen-heavy anthers of a bright rust color. There are small purple spots on the orange petals, and the stems are pale green which perfectly complements the color of the flowers.

At the summit of the stem with its tiers of neatly arranged whorls of leaves, the flower cluster stands. The lower group of buds opens first, then the others, finally those at the tip. Sometimes the entire cluster is at its best at once, and then the woods indeed are dramatic when wild orange lilies bloom.



CLEAVERS (Rough Bedstraw)

Galium aparine L.

Summer Woods Cleavers is the largest of the bedstraws in Illinois. It is a coarse, harsh plant with long, weak, reclining or ascending stems along whose many ridges are innumerable saw-teeth. These rasp and tear at bare flesh or clothing as a hiker walks inadvisedly through a tangle of bedstraw. The plants are so massed and so well armed that portions of the stems tear away from the plants and are carried off on clothing.

Along the stem are leaf-whorls which are three to four inches in diameter with six to eight long, narrow, rough leaves.

Cleavers is found as part of that low growth which grows in damp places in the woods and swamp edges. In company with jewelweeds, nettles, and docks, the bedstraw fills large areas with its pale green jungle of tangled stems. Here among them the mallards from the swamp may waddle about to pick up the remains of the paired seeds in autumn, or find a place to bed down for a siesta in the sun. Bedstraw is easily trampled, so that the resting places of wild things is easily seen among the stems. Yet it was not because animals might sleep in the bedstraw, but for quite another reason that it was given its name. Legend long ago said that this coarse and prickly "straw" was used in Europe to fill mattresses, and that the Holy Family rested in a patch of *Galium*.



SMALL BEDSTRAW

Galium trifidum L.

Summer Woods They are plants of the substrata of the midsummer woods—weak-stemmed, inconspicuous plants which fill in the gaps among larger and more ostentatious plants. The bedstraws are numerous, much-branched, fragile, fillers-in, yet they have a certain charm of their own which gives them their own unique niche in the woods. The bedstraws have an architectural beauty, a symmetry and rhythm of growth.

The stems are arranged to accommodate many even whorls of leaflets and it is these leaves in their individual size, shape, and texture which serve most easily in identifying bedstraws at any time of the growing season. All have four-parted, small white flowers which are held on many-branched, thin, thready stems.

Smallest and most ornamental of the group is small bedstraw. The leaf-whorls are scarcely an inch in diameter, usually smaller, with very narrow, dark green leaves set in a six-parted star around the angled, weak stem. The flowers are a froth of white in midsummer. They appear to be almost suspended in the air above the tangle of dark green foliage. The fruits which soon appear are held in pairs on the tips of the stems.

Wild licorice (*Galium circaccans*) identifies itself at once when a piece of the plant is broken—here is the true flavor and odor of anise or licorice. The leaves are broad, oval, four of them arranged in a group in whorls along the short stem. Wild licorice holds its stems more erect than most of the other bedstraws and often sends up a number of stalks from a single root. Flower stems spring from the leaf whorls and branch several times with small greenish white flowers on each.



SMALL PLANTAIN

Plantago virginica L.

May - June

Lawns, sandy uplands

Some of the plantains were here when Columbus landed on New World shores; others came afterward and soon grew abundantly.

Where the white man traveled and set up his lodging, plantains sprang up next year. White-man's foot, the Indians called them, those small persistent weeds which they never had seen before. Wherever the white man cut the woods and broke out roads, wherever he pastured his stock or laid out his fields and gardens, there, in another year or so, were plantains growing. They seeded themselves, made deep, persistent roots which could send up new plants if the leaves were sheared off down to the ground. It took a lot to destroy the European plantains and as a result they have long since encompassed the country.

One which is very common over most of America is the whip-lash English plantain (*Plantago lanceolata*) which grows in grassy places and in sandy roadsides. It has a basal rosette of long, narrow leaves from which rise many long, strong, slender stalks each topped with a narrow head of creamy-yellowish stamens. For a little while it is a graceful, interesting flower-head which seeds itself abundantly.

One of the native American plantains is the less obtrusive small plantain. In sandy places the small oval, hairy leaves stand up with a densely hairy little flower spike. This terminates in a narrow spike of staminy flowers. It is always a small, compact plant apparently without the ability to multiply tremendously as the European plantains seem to do. In consequence it is much less common—a compact little green plant which most people tread underfoot without even noticing what is there.



CATNIP (Cat Mint)

Nepeta cataria L.

Summer Woods The soft, downy, grey leaves and the downy, four-angled stems of catnip would point it out if nothing else identified this plant with the clusters of grey-white flowers. But when one crushes a leaf or smooths a stem, the aromatic odor which springs forth tells at once that this is catnip, beloved by felines everywhere. Both the Latin and the common names concede to the admiration which cats have for any portion of fresh or dried catnip, for this is a recognized quality, not a fable—it really does attract cats.

Perhaps it was for the benefit of the early cats which were brought along as pets and rat-catchers to the New World that the first catnip was brought from Europe, for this is a naturalized herb from Europe. Wherever it is planted and wherever it grows—and it was first of all planted in early herb gardens in America—cats seek it out. With a beatific expression, they roll in it, nibble it, purr loudly, yowl, walk around it and, grinning toothily, roll in it once again. Dried catnip often is placed in imitation mice or balls, and cats will play with these for hours.

But catnip was not only for the benefit of cats. It has been used as a popular home remedy for infant colic. The leaves were brewed in hot water as a tea, and even today catnip tea is given for stomach ache or is drunk simply as a refreshing afternoon beverage.

Catnip is a grey plant. The leaves are a greenish-grey, the stems are decidedly grey, the flowers are grey-white with tiny purplish speckles, and the entire plant, flowers, seeds, leaves and root, has that aromatic odor which means catnip and no other plant in the world.



MISTLETOE

Phoradendron flavescens (Pursh) Nutt.

June

**On trees in southern
Illinois**

Plant of the remote mythical past of the Old World, yet a part of the Illinois flora, mistletoe is a creature of legend. It grows wild in southern Illinois in counties bordering the rivers and forming a horseshoe beginning with Lawrence County on the Wabash and ending with Jackson on the Mississippi.

Here on many an oak and apple and elm, as well as on black gum, maple, sycamore, walnut, and honey locust, the great clusters of the mistletoe stand revealed when the leaves fall from the host trees. High above the ground the mistletoe in early summer blossomed with small greenish-yellow flowers and in autumn its translucent white waxen berries are ripe. Perhaps the robins wintering in the southern part of the state will come to the treetops to eat mistletoe berries. As the missel thrush of England does, perhaps the robins wipe their sticky beaks on a bough to clean off the clinging seeds. Thus will the mistletoe seeds find a place to grow. With never any contact with the soil, the tiny seeds finally will germinate, will send plug roots into the bark and eventually into the tissues of the tree. The mistletoe is a partial parasite. Although its thick oval leaves manufacture their own food, the plant, nevertheless, is dependent upon the tree for water and minerals. The tree itself does not appear to be greatly harmed by its guest.

Through the centuries the mistletoe, because of its strange manner of growth, has been surrounded with legend and myth. In ancient Britain, mistletoe was revered by the Druids who, at the beginning of the winter solstice, held a special ceremony to cut the mistletoe from the sacred oak and bits of the plant were given to all who watched the ceremony.



WILD YAM

Dioscorea villosa L.

June

River bottom woods

In the rich soil of river bottoms in Illinois, particularly southward through the state, a plant which is kin to certain tropical species thrives and blossoms and sets its seeds. This is the wild yam.

It has a tuberous root which apparently is not used as food. The dried root of one species, however, is used as medicine. The heart-shaped, satiny leaves are deeply veined and are among the most beautiful leaves to be found in Illinois. They grow from a tough, thin, twining stem which binds itself around sturdier plants and climbs and dangles in the deep shadows of the river-bottom forests.

Wild yam in June is in bloom. It bears sprays of fragrant, cream-colored flowers suggesting those of the cultivated Madeira vine. In autumn the fruits appear in ornamental clusters of angled, winged, oval seeds, artistic in shades of brown.

Wild yam is one of the prominent vines of the river lowlands. In these humid, alluvial haunts many vines seem to thrive. In the habitat of prothonotary warblers and Carolina wrens, of stinging nettles and pawpaw trees, of flood waters and caked dry soil between floods, the wild yam, star cucumber, trumpet vine, bittersweet, and wild grape are found. Here in the shadowy bottomlands where the sycamores grow huge and white and hollow and provide sleeping quarters for owls and raccoons and squirrels, the wild yam sends up its tendrils and its wiry stems. It festoons itself over the pawpaw trees and the wahoos and the old horse-weeds of the year before. It is not a high-climbing vine like the grapes and trumpet vines; it stays low and neat and its heart-shaped leaves hold their satiny gleam all summer long.



COMMON GREENBRIER (Cat Brier)

Smilax hispida Muhl.

June

River bottom woods

Vicious with thin, needle-like thorns, the greenbrier makes a network of entangling vines which are bright green all winter long. Clusters of dark green fruits and a few shriveled leaves still hang on the vines, and the cardinals which live in the woods all winter gather here. In time of snow, the bright colors of the male cardinals and the more muted tones of the females against the snow and the green tangle of vines is a pleasant sight in a land not noteworthy for color in winter. Greenbrier tangles, and cardinals . . . this is one of the pictures of the Illinois winter.

Greenbrier is common in the lowlands where it twines into trees and bushes and makes a jungle of prickly vines which live unchanged, except for additional growth, for many years. In the tangles in spring the cardinals build a nest; they eat the green fruits in autumn, find shelter among the vines in winter. In spite of the unpleasantly prickly nature of the brier, it has its place in the efficient plan of the wild.

It is a true smilax. Its green stems are set alternately with ribbed oval leaves, bright green and durable. The flowers which come in late May or early June are in clusters—tiny, six-petaled, green-white blossoms. In spite of their meager appearance, they are a member of the Lily family. The stems are densely thorny from the ground to the top of the stem, though less so on the younger growth. This prevents the greenbrier from being popular as greenery indoors, as its less cantankerous cousin, the southern smilax, is used. Instead, the greenbrier remains in its humid bottomlands and feeds and shelters cardinals all year around.



CARRION FLOWER

Smilax lasioneura Hook.

June
River bottom woods.
roadsides

Through the heavy black alluvial soil of the river-bottoms forest in spring there comes the asparagus-like tip of the carrion flower. It is stiff, not like a vine at first. The smooth stalk with its alternately placed oval or heart-shaped leaves rises cobra-like into the air. Tendrils emerge from axils of the smooth, blue-green leaves and seem to grope for a place on which to fasten themselves. When the tendrils at last make contact, the plant grows more resilient and twining, and grows upward by means of the support of a nearby bush or low tree.

In early June there are long, stiff, smooth stems which spring from leaf or stem axils, and these stems bear tight clusters of greenish-yellow or whitish flowers. They are six-parted with six protruding and recurving stamens, and are heavily scented with the unmistakable odor of carrion. To this apparently are attracted insects which also devour carrion or lay their eggs in it, and by their assistance the flowers are pollinated.

All summer the smooth green vines of carrion flower twine in the dusky bottomland forest. Mosquitoes are voracious; nettles grow high; the crayfish chimneys are dry and fall over as a passing fisherman walks by. Now in early autumn the fruit of the carrion flower is ripe. In the same form of a tight ball, the blue-black fruits, covered with a whitish bloom much in the manner of wild grapes, are held in the bright sunshine. Although they so greatly resemble tight bunches of grapes, the fruits of carrion vine apparently are not edible, and not even the passing robins seem interested in eating them.



MOONSEED

Menispermum canadense L.

June Woods In that cluster of bluish-black fruits which look so much like frost grapes in the September woods, there are little crescent moons. They are hidden inside those frosty-looking berries hung on the old fence, berries which are dry and blue-black all the way through, not juicy as grapes are, and not edible. When the pulp is cleaned away from the seed, it stands revealed in its almost cryptic shape. It is a perfect crescent moon three-eighths of an inch in diameter, rough and ridged, the seed of the moonseed vine. The name, as not always happens in common plant names, is most appropriate. The botanical name as well, *Menispermum*, means the same thing—*meni* is moon, *spermum* is seed, and there it is, moonseed.

The moonseed blossoms in June. Then the twining vines put forth clusters of small white flowers with protruding stamens which give the clusters a fuzzy look. From the rough stems the axillary stems thrust out and bear their flowers which later become those clusters of fruits in the warm sunshine of October.

The leaf of moonseed is thick, broadly heart-shaped or lobed, on long petioles. From an exceedingly deep root set firmly in the heavy soil of the river woods, the vine rises in spring and twines about the low trees, or on a fence where a fence happens to coincide with the direction in which the moonseed wishes to go. The family of the moonseed, which has two other members in the United States, is chiefly a tropical group. Vines are largely of tropical origin; few if any are known to grow wild in the northern forests and the still more northern countries beyond the border.



GOAT'S-BEARD

Aruncus dioicus (Walt.) Fern.

May - June
Steep wooded hills

It is a steep north hillside where the oaks stand tall and small crisp ferns grow. After the hepaticas and bloodroot and dutchman's breeches bloom in April, there is little other bloom on that cold north slope until late May and early June, and then something wonderful happens. The wild spiraea, the goat's-beard, blossoms.

The botany books call it goat's-beard, but a name like that cannot justly describe the magnificent branching spikes of palest cream-colored fuzzy flowers—blossoming plumes which stand three feet tall above the low, bushy, compact plants. Goat's-beard is in bloom on the side of the hill, and for a while the hillside is lit with a special glory of its own.

Goat's-beard is one of the Rose family, but the family resemblance is not as obvious in the fluffy, fuzzy Spiraeas and Aruncus as they are in the more obvious strawberry and cinquefoil. Nevertheless, the large compound leaves easily could be large compound rose leaves; the characteristics of the flower mechanisms are there, too.

The goat's-beard is fragrant, much as the cultivated Astilbe is. Goat's-beard looks like a tall, loose-flowered Astilbe and as such is worthy of a place not only in the woods but in gardens everywhere. This tall plant is typical of moist ravines and hillsides and is closely associated with wild hydrangea.



WAHOO (Burning Bush)

Euonymus atropurpureus Jacq.

June

Bottomland woods

The wahoo or burning bush is remarkable at two seasons of the year—in early June when it blooms, and in autumn when it fruits. There is nothing else quite like the wahoo, nothing else which grows as a low tree and bears small maroon flowers, no other tree in autumn which is decorated with a host of little pink lanterns. Even its Indian name is odd, easy to remember, typical of an American plant in American woods. "Wahoo" is derived from a Dakotan Indian word.

The wahoo is one of the few shrubs with opposite twigs, leaves, and buds. This is a mark to look for at seasons when neither flowers nor fruits name the plant at once. The leaves are oval and finely toothed; they look a good deal like those of bittersweet, to which it is closely related. The flowers come in May or early June. They burst on thin, much-branched sprays from the axils of the leaves—small, four-petaled, maroon flowers and round little buds. Like the flowers of bittersweet, those of wahoo are of two sexes on separate trees, so that there must be trees of both sexes in order for the fruiting trees to bear.

They are little noticed until autumn. Then when the bittersweet is orange and the pawpaw leaves in the bottomland woods are like pale yellow silk and drift to the ground, the fruits of the wahoo suddenly make their presence known. They hang like little Oriental lanterns on slender stems, fruits with a purple-pink shell which splits to reveal scarlet seeds hanging on white threads. The fruits remain on the low trees for some time, but are not eaten by many creatures, though small rodents seem to relish them. The dried bark of the root is a strong cathartic, and has been known to poison cattle that eat bark or twigs.



BLACK SNAKEROOT (Sanicle. Stick-Tights)

Sanicula marilandica L.

**May - June
Woods**

In the dry woods there comes the weedy-looking plant called sanicle or black snakeroot, with its somewhat aromatic leaves and stem and its reputation for healing. Long ago when the plant was named *Sanicula*, the name was derived from *sanus*, the Latin word meaning *to heal*. It is not specified just what ailment the sanicle healed, but at one time a tonic was made of the juices from its roots and probably this brew was poured down the throats of the ailing young and old in the pioneer days of America.

The plant of sanicle is slender and rather interesting from the standpoint of its groups of spreading, glossy, bright green leaves with their deep toothing and incised veining. From the groups of leaves which grow in whorls where the stems branch, the slender flower stems jut out at graceful angles. The flowers are tiny single heads of greenish-yellow blossoms, not beautiful as one thinks of a beautiful flower, but nevertheless completely equipped to produce seeds to perpetuate sanicle in the Illinois woods.

These seeds in late summer and autumn are among the many hitch-hiking seeds which leave the parent plant, travel elsewhere by means of some other creature's locomotion, and start a new colony. Sanicle has small, round, hard seeds covered with short, soft, curving prickles. When any fabric or fur brushes past the sanicle fruits they immediately are separated from the plant and go off. Later, the seeds are dislodged from their carrier, fall to the ground and next year there are sanicle plants in that spot.



HAIRY PENSTEMON (Beard Tongue)

Penstemon hirsutus (L.) Willd.

May - June

Dry woods, hills

Spring is over, and in its departure the blossoming of the hairy penstemon appears on the rocky hills and dry slopes of Illinois. The penstemon comes as a final gesture of May, an introduction to June and high summer. Yet penstemon still has something of the quality of spring flowers, but has that sturdiness also which is common to summer blossoms.

Hairy penstemon on a dry, sunny Illinois hill has a straight tall stem decorated with pairs of opposite, hairy, stemless, tapering leaves. The flower head is plump and large, the small stems downy and often a spiderweb is strung among them. The flowers are tubular, white or lavender-white, with purple bee-lines in the throat. All of the flower trumpets face outward in a loose, globular cluster. The tubular flower is five parted, with a three-lobed lip much as in the mints. The throat is densely bearded, hence the name of beard tongue which is often given to the penstemons. They are constructed in such a manner that only specialized insects may push through for the nectar at the end of the tube.

In addition to the above there are at least six other species of penstemons in Illinois. Two deserve special mention. The pale beard tongue (*Penstemon pallidus*) with downy leaves, tall nearly smooth stems, and nearly white flowers that are short-tubular, is found in dry wooded slopes. The foxglove penstemon (*Penstemon digitalis*) perhaps is most frequently found throughout the state. It grows in dry and moist soils and often forms large colonies of plants which grow 3 to 5 feet tall, with smooth leaves. The flowers are white or purplish, the corolla a little more than an inch long and gradually enlarged upward.



SICKLEPOD

Arabis canadensis L.

May - June In spring when the woods still contain the compact, the
Deep woods colorful, or the flowerful plants, there grows a tall, ragged-looking stem of a plant which seems to belong more to open roadsides in summer than to the shade of hilly woods. Now in company with the flowers of bluebells, the sponge-like growth of morels, and the flash of the scarlet tanager in the broad new leaves of the oaks, is sicklepod, one of the Mustard family.

The stem is pyramidal, tapering from a leafy base, up, up, graduated to smaller leaves as it goes, not branching for a long time, until the top expands into many thin branches which all extend upward and produce small greenish yellow flowers. They are a rather disappointing result of all that promising growth. Following the flowers, the seeds rapidly develop in long, thin, curved seed pods—these are the sickle-shaped pods which gave the plant its name. The stalk remains during most of the summer, the seed sickles now three inches long, curving, dry, releasing the tiny seeds, so that next spring the same cycle of a tall stalk in the damp ravine will interrupt itself in small flowers and more sickle-shaped pods.

Similar to the above although a shorter plant is the smooth rock cress (*Arabis laerigata*) which is found growing on the sides of rocky ravines. It is emphatically a shade plant. In contrast with the last is sand cress (*Arabis lyrata*) one of the earliest spring flowers in the sand dunes and on rocky brinks. The basal leaves are lyrate but those on the stems are linear. A close relative, the Virginia rock cress (*Arabis virginica*) is found in rocky woods and in the fallow fields. The plants usually are prostrate and much branched at the base with pinnatifid leaves.



HONEWORT

Cryptotaenia canadensis (L.) DC.

June

Woods, bottoms

It comes when the woods of Illinois long since have been given over to the weedier plants and the lush growth of summer. The oak woods are dense and rank with harsh plants and stinging nettles, with horseweeds and mosquitoes and poison ivy. Contrasting with the neatness and orderly growth of leaf and flower in the spring woods, the woods of summer in Illinois are overgrown, for the most part unpleasant to penetrate.

Yet even this period of growth and time is important in the ecological scheme of this particular region. The humidity and heat of summer, in which the horseweeds attain a height ranging from ten to fourteen feet in a good season, is the same heat and humidity which makes the remarkable corn crop of Illinois develop to its fullest extent.

There in the woods where the shadows are deep, the honewort blooms inconspicuously and makes its seeds. The leaves usually are borne in threes or fives, are of varying sizes, sharply saw-toothed and dark green. The plant is somewhat aromatic. The flowers are sparsely produced on scanty, delicate umbels.

In late summer and autumn when hikers again find their way into a woods in which frost has laid low many of the objectionable plants, the honewort seeds are dispersed. Lightly they are attached to clothing which brushes past them, or they cling to the fur of a dog, or to a cow's tail, and drop off elsewhere. And in the passing of the autumn and winter and with the coming of another spring, new honewort plants spring up from the places where the seeds came to rest.



BLACK-EYED SUSAN

Rudbeckia hirta L.

June - July

Roadsides, fields, uplands

In June and July, flowers are found along roadsides and in sunny fields—now the face of the fields is painted with blossoms. The woods in spring bore the great burst of early bloom, but now the coming of deep shade in the woods and bright sun in the open has brought the tide of blossoms into the sunshine. Over the uplands and along the country roads, the black-eyed susans gild the countryside.

Of them all, perhaps, the black-eyed susan is one of the brightest and most colorful, among the best adapted to bouquets and garden use as well as to life in the sunny uplands. The fact that it has a merry common name makes it known as a flower of the people who have loved it for generations. As a coneflower, denizen of the prairie, it seems to be unharmed by the coating of roadside dust which does little to dim the orange-yellow splendor of the flowers. The center is hard, a cone-shaped formation of stamens and pistils, purple-black, then studded with yellow pollen as the stamens mature. The leaves and stems are covered with long, stout hairs. These serve to keep the dust from clogging the breathing pores or stomata, which keep the plant alive and functioning properly.

Thin-leaved coneflower or brown-eyed susan (*Rudbeckia triloba*) looks like a small black-eyed susan. It blooms late in the summer when most black-eyed susans are past their blossoming time, and makes masses of bright yellow and black flowers along shady roads. The flowers of thin-leaved coneflower are about half the size of *Rudbeckia hirta*, are held separately on many-branching stems above leaves which are thin, hairy, and vary from a three-lobed form to those which are narrow and unlobed.



THE FLEABANES

Erigeron species

May - June

Roadsides, fields

Even though wild geraniums may bloom and a few violets may be left, it is a good indication that spring is waning when the fleabanes begin to bloom. In pastures and sunny places stand up the many-branched heads of these small, daisy-like flowers, the *Erigerons*. They are slightly fragrant, delicately colored, rather weak and brittle of stem. They are the forerunners of hordes of summer Composites whose appearance now and through the summer months will increase as the heat grows and the summer days mature.

Daisy fleabane's flower is a bright yellow, velvety disk of stamens and pistils surrounded by many fine, thready rays. They are so thready and fine that in Philadelphia fleabane (*Erigeron philadelphicus*) there may be 150 to 200 rays in one small flower. It is, on the whole, an attractive blossom, not especially weedy in appearance, although to most people it is a weed. Children for generations have gathered fleabane "daisies" as bouquets for their mothers or for their dolls.

Means of identifying three of the fleabanes require close observation. *Erigeron annuus* one of the few American weeds to be naturalized in Europe, has clasping, tapering leaves; the rays are white tinged with pink or lavender and are rather short as compared with the width of the center of the flower. *Erigeron philadelphicus* is hairy with clasping, hairy leaves which usually are toothed or lobed. The rays are very abundant and are rose-purple or pink or white; the buds droop. *Erigeron strigosus* is the most slender of the three, with very narrow, alternate leaves. The rays are white, twice the length of the yellow disk center.



WHITE AVENS

Geum canadense Jacq.

June Woods There are certain wild flowers which have earned the name of weed because of an undeniably disagreeable attribute of entangling themselves in the destinies of passersby. Nobody seems to love a flower which produces armed fruits which in late summer and autumn hook themselves into any cloth or wool or fur which brushes against them, and, later on, are difficult to remove. When the plant has the further disadvantage of insignificant flowers, then the whole thing seems, to us, to be a waste of Nature's time and effort.

It is easy to look at the wild things from the viewpoint of a human being with certain needs and values, certain attitudes and dislikes, certain standards of conduct and beauty. It is not so easy to observe a plant objectively for what it is, as an item in Nature's economy which may have a reason for being which is quite beyond human understanding or appreciation. The fact that a plant is there, has survived glacial epochs and the cataclysms of the geologic past, and is able efficiently to attract the proper insects which fertilize the seeds, and is able to distribute them to other places where they will grow and not crowd the parent plant, should be enough to recommend it.

So—here is avens, minor member of the magnificent Rose family. Here are weedy little plants with thin stems and leaves which are a good deal like those of a blackberry, and flowers which are reduced to scarcely visible white petals around a large stamen-filled center. As soon as the petals fall, the center develops into a seed head composed of many fruits, each topped with a curving prickle. This easily becomes attached to creatures passing by and the seeds thus are transported far away.



SHEEP SORREL

Rumex acetosella L.

May - June

Fields, roadsides

When old pastures and unused fields of Illinois take on in miniature the colors of the Grand Canyon and the Painted Desert, then spring is over and early summer is on the land. It is now that the sheep sorrel sends up thin, wispy, whip-lash spikes which blossom with tiny flowers and later seeds in shades of yellow, rose, russet, orange, and brown. A field of sheep sorrel is all these colors in an ever-changing pattern of color which is so common that it usually is ignored, yet so beautiful that it may be compared with the rich hues of the ancient and more permanent paint of the Arizona desert.

Sheep sorrel is not an exotic flower. It is neither a rose nor an orchid, but is a member of the Buckwheat family and is akin to smartweeds, docks, and buckwheats. It has a basal cluster of halberd-shaped leaves, dark green and acid of juice, and several flower stems bearing a few small leaves. The flowers bloom with abundant pollen and the seeds form almost at once. The colors cover a wide range of tones of red and yellow and orange, so that the field of sheep sorrel presents that pastel, many-colored effect so typical of this plant.

Like many of the other docks, sheep sorrel is edible, both boiled as greens and as a base for a soup. A small amount of the fresh young leaves makes an unusual seasoning for potatoes, rice, fish, or as an ingredient in a mixed salad.

When eaten raw, sheep sorrel should be taken in small quantities because of the presence of potassium oxalate in the leaves. When boiled, the acid is reduced to harmlessness. In France the sorrel is planted in boxes in basements, kept dark, and the pale leaves used as a delectable item in salads.



POKEWEED (Scoke. Garget. Indian Poke)

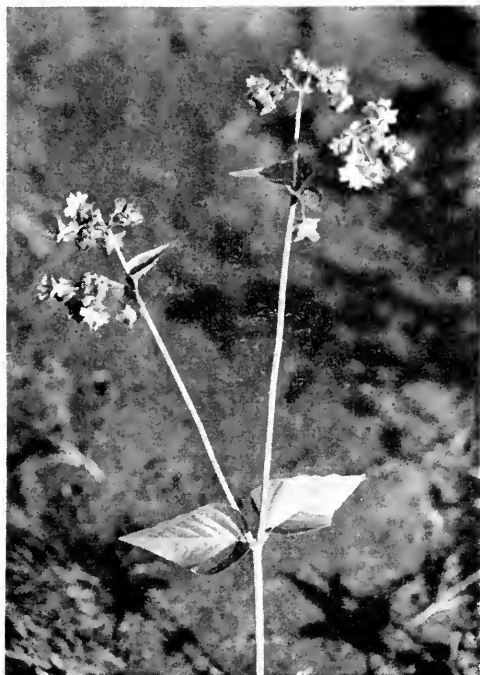
Phytolacca americana L.

June - September

Waste places, woods

Thrusting through the moist earth of the April woods comes the Indian pokeweed. The shoots are pale green and succulent, in clumps, in groups, sometimes by dozens where there used to be an old woods cabin or a clearing now given back to the woods. The Indian poke comes when the morels are growing, when the violets are in bloom and mayapples open their white flowers. It is at this time in its growth that the pale, juicy stems and crinkled, tender leaves of poke are gathered and cooked as greens. Those who gather Indian poke, however, must carefully cut off the shoots above the ground, not pull them up, because the big ruddy root is poisonous and must never be included in the dish of greens.

The pokeweed continues to grow. If the shoots are gathered, new ones within a few days will make their appearance. The stalks branch, the stems grow stout and tall, until each plant makes a broadly spreading bush with thin, green, tapered leaves upon it. Then in June there appear racemes of small, greenish-white flowers which are followed quickly by racemes of small, flat green buttons of berries. Slowly, through the summer, these grow to be as large as peas and by October have turned dark purple-black and are filled with purple juice. Now the stalks of the Indian poke have turned a bright magenta, as if they had been dipped in dye, and to the pokeweed patches come the robins, blackbirds, and bluebirds to eat the juicy berries. The robins have stained bosoms and beaks, and sit about waiting for the berries to digest that more may be eaten. Then comes hard frost. The last of the berries are gone, the thin leaves, always so frost-sensitive, wilt away, but remain for a large part of the winter, pale and dry and thin as paper, on the bleached, dried bushes of the poke. These skeletons stand all winter and fall down when new shoots push them out of the way.



HEART-LEAVED UMBRELLAWORT

Mirabilis nyctagineus (Michx.) MacM.

May - June

Waste places, roadsides

Beside the railroad tracks, there in the cinder ballast where fast wheels roar past many times a day, there stands a low, bushy plant with delicate pink flowers like miniature azaleas. But it is not akin to the elegant azaleas—this is the lowly umbrellawort which is related to the garden four o'clock or marvel of Peru. Umbrellawort's flower resembles the latter, but is smaller. It has a pleasant color of lavender-rose, is prettily plaited and fluted, hangs forth its widespread bell, and in the June sunshine the plant stands there making seeds and producing more flowers through much of the summer.

In spite of its habitat which so often is beside railroad tracks or in waste places, the umbrellawort is a smooth, clean plant. The heart-shaped leaves grow opposite each other on the jointed stem, which forks above almost every pair of leaves. The flower clusters are placed at the top of the stem, just above the last pair of leaves.

Umbrellawort is not in bloom all day long, not unless the day is cool and cloudy. Usually the flowers are open in the morning and have closed by afternoon, but next day as the summer sun comes up and a hot day begins all over again with the wild songs of indigo buntings on the wires, new umbrellaworts open wide.



WILD BLACKBERRY

Rubus allegheniensis Porter

May - June

Roadsides, uplands

Perhaps the most violently prickly plant in Illinois, not counting the green brier, may be the common blackberry with its viciously recurved prickly-thorns. Like these on some cultivated roses, these thorns are sharp as needles and very strong; they rip flesh or clothing with equal ease, so that the picker of wild blackberries must go armed with the proper protection or suffer the consequences. July and August are wild blackberry time in Illinois, a pleasant time of juicy ripe black globules under a hot summer sun.

In late May and early June the wild blackberries come into bloom along the roadsides and at the edges of thickets, along pasture fences and on dry hills. The tangles of bushes are decorated now with big clusters of five-petaled white flowers, like large white apple blossoms with a star-shaped center emphasized by the cluster of loose dark stamens. A blackberry flower is one of the most delicate and pure white blossoms in the wild.

The blackberry, together with the strawberry, raspberry, plum, cherry, apple, peach, and pear all belong in the important family of Roses, one of the most wonderful and widely spread plant families in the world. Members of this family are found over all parts of the northern hemisphere where the climate is temperate and there are summers and autumns, winters and springs much as we know them in Illinois. A sunny lane, a catbird singing, a vireo nesting in the thorny canes, and wild blackberry blossoms glistening white in the sunshine.



COMMON CINQUEFOIL (Five Finger)

Potentilla simplex Michx.

May - June

Grassy places, uplands

Over the dry hilltop and among the low grasses, the traveling stems of common cinquefoil follow their whims and root where they rest on bare earth. They are very much like a strawberry in this, and the plant, in fact, minus its bright yellow little buttercup of a flower, might be confused with a wild strawberry plant setting out its runners.

The cinquefoil is a common plant, one much loved by children who think it is a small sort of buttercup but very welcome anyway to add to a bouquet. The flowers are half an inch broad, bright gleaming yellow with five, bluntly heart-shaped petals around a yellow center composed of many stamens. Like the other cinquefoils, it is a member of the Rose family, whose tribal characteristics are easily visible in the simple flower and the compound leaves.

Five-finger, it is often called. Anyone who saw those five neat leaflets on the leaf-stem, alternately placed along the traveling runners, would know why someone called the cinquefoil by that easily remembered name. It is found commonly in dry places and in the sand country, in sunny, dry oak clearings, when May is past its middle and summer is coming warmly down upon the land.



ROUGH-FRUITED CINQUEFOIL

Potentilla recta L.

June

Uplands, roadsides

It is always unmistakably June and summertime when, along sandy roads and on slopes and always in blazing hot sunshine, the pale yellow flowers of rough-fruited cinquefoil bloom.

They are an inch broad, with five heart-shaped petals of a creamy light yellow. They are much like the single yellow rose, and in fact belong to the rose family. But the cinquefoil is called a weed. It came over to this country as an uninvited immigrant from the fields of Europe.

No one knows just how it happened to come here. It may have come in a bit of mud caught in the heel of an immigrant from France. It may have come in a bale of hay, for the cinquefoil grows in grain fields and often is threshed with the wheat, oats, or rye whose fields it inhabits. At any rate, the rough-fruited cinquefoil some years ago came across the Atlantic and scattered itself in that determined way plants have in perpetuating themselves, and multiplied. Now, authorities say, it is found from Maine to Ontario, Illinois, and District of Columbia.

The flowers are fragile. The heart-shaped petals last less than a day and as the sun goes down in the June north, the petals drift to the ground and more buds prepare to open the next morning at dawn. The plants are stiff, rather bushy with compound, deeply toothed, roughish green leaves.



WILD ROSE

Rosa carolina L.

May - June

Roadsides, woods

Pale pink, five petaled, wild roses, fragrant with the essence of early summer, grow in a prickly tangle along railroad tracks, in woods, and in upland

pastures.

Casually, the buds of roses open. They are fresh and new as the morning of the world. They spread their unique perfume to the sun and the butterflies, last but a day, and, when the sun is sliding into the west, drop their five, heart-shaped, pink petals and prepare to open more buds next morning.

It is June in Illinois and roses are in bloom. Over the whole northern hemisphere, from China to England and from Sandwich to Seattle, other roses bloom. For although England claims the rose for its national emblem, Iowa, New York, and North Dakota call the American wild rose their state flowers, and District of Columbia uses the American Beauty as its own special flower, the rose belongs to the world. There is a vast kinship and unity among the people everywhere who love roses.

There are two upright bushy roses, commonly found on the uplands of Illinois, which are rather difficult to distinguish. The pasture rose (*Rosa carolina*) usually has straight prickles, with glandular fruit and usually with calyx lobes deciduous. The meadow rose (*Rosa blanda*) usually has no prickles, has smooth fruit and usually persistent calyx lobes. Both usually have leaves which have seven leaflets. Another common rose, found on prairies and in moist woodlands, is the climbing rose (*Rosa setigera*) which has long stems armed with curved prickles; the leaves have three leaflets.



SALSIFY (Oyster Plant)

Tragopogon dubius Scop.

June - July Salsify was planted in gardens long ago in the days when
Roadsides only European garden seeds were known and planted in
 pioneer soil. But salsify didn't long remain in gardens.

Its fluffy-headed seeds went flying over the countryside and planted themselves wherever they came to rest, wherever they could penetrate the soil and start a root. The root grew fast and stout and hairy—the edible part of the oyster plant or salsify—and sent up in springtime the long, almost grass-like, bright green leaves. Then in June the plant grew taller and bore long smooth stems with buds at the tips, long, tapered, graceful buds which, on a bright summer morning, open as beautiful yellow or purple flowers. There are three species of salsify, *Tragopogon porrifolius* which is purple and is most commonly escaped from gardens, *T. dubius* with its yellow flowers and a broader range across the continent, and *T. pratensis* which is sometimes called yellow goat's-beard. They grow much alike except for the striking difference in the flower colors.

A little while after a flower has blossomed—it opens in the morning, by noon is closed, and by next day is forming its fruit—the enclosing bracts open and there in the morning sunshine is a fluff-ball many times larger than that of a dandelion, though patterned upon it. The ball is a pale buff color. These big puff-balls of the salsify stand briefly along the roads and railroad embankments, then break as the winds come and blow the fluff-borne seeds into the summer air. Once again the salsify is on its way.



MAYWEED (Dog Fennel)

Anthemis cotula L.

June - August
Barnyards, waste places

The neglected barnyard is odorous with the rank-smelling weeds which seem to gather about man and his farm abodes whenever he does not take the trouble to keep them weedless. The jimson, the poke, the motherwort, the yarrow, tansy, burdock, pigweed, the dog fennel or mayweed—they are all strongly scented, strongly rooted, strongly fixed in the backyards and barnyards of America.

Among them all, mayweed perhaps is most odorous. Its densely fine-cut, dark green leaves and many-branched stems are violently aromatic, its small daisy-like flowers rank. Contact with leaves, stems, and flowers often cause a severe case of dermatitis in susceptible individuals, and it is shunned by hogs, sheep, and cattle who will not touch it for food. Consequently in the barn lot and the neglected, over-grazed pasture, only the weeds such as mayweed, which are distasteful to animals, remain when all edible herbage is gone. The result is a weed patch of no use to anyone. The hogs and cattle roam through the malodorous plants and look in vain for an edible mouthful.

Mayweed, aside from its rank odor and weediness, is, after all, a cheerful-looking little daisy with a flower bearing the typical flat yellow center and spreading white rays as found in more elegant daisies. It is about a third or half the size of the common ox-eye daisy, and is closely related to it in the Composite family. Like the common daisy (*Chrysanthemum leucanthemum*), the mayweed is one of the plants which long ago was naturalized from Europe.



YARROW (Milfoil)

Achillea millefolium L.

June - July

Fields, pastures

A long time ago, far back in the days of heroic Greece when men were gods and gods were men, the hero Achilles, it is said, discovered certain medicinal virtues in aromatic leaves which he used in treating Telephus during the plague. That is the legend—and at any rate the plant which is native of Europe and Asia has been named *Achillea* for a good many centuries. Yarrow, we call it, and know it as a common and not unpleasantly scented weed of the summer fields and roadsides.

Yarrow is a grey-green plant, a stiff, fibrous stalk bearing numerous very finely divided leaves, almost fernlike in appearance. The basal rosette of fern-like leaves is larger than the stem leaves and remains throughout the winter. The stem near the top branches and at the top of each divided branch is a flat head of small white flowers. These are arranged with five squarish, petal-like rays around a yellowish-white, stiff center of stamens and pistil. When the yarrow is in bloom it presents to the summer sunshine and rain a compact, flat head or corymb of flowers which lasts a long time. When the plant at last has served its time and the flower stalk dies, the flower head remains in a dry state much as it was in life.

The entire plant is aromatic, an odor not unpleasant to most people, but when cows mistakenly nibble yarrow leaves, a strong and most unpleasant flavor and scent is given to the milk. When grass in the pasture is ample and green, cows seldom or never eat yarrow or other undesirable plants, but when pasturage is low and food scarce, even the distasteful yarrow may be devoured.



VENUS'S LOOKING-GLASS

Specularia perfoliata (L.) A. DC.

May - June
Sunny banks,
bottomlands

There comes a plant in late May and early June, an inconspicuous plant with a short stem set with clasping, cupped leaves, which grows in waste places and dry woods. Not at all important-looking, no flower as yet . . . but now as June arrives, the stem grows taller, elongates so that the cupped, scalloped leaves are further apart than at first they were, and there is a bud in each leaf-cup. In a few days the buds at the bottom of the stem open in the bright June sunshine. The Venus's looking-glass is in bloom. Those dozen or so oval leaves are the "mirrors", said the ancients who knew it long ago in Greece, and the five-parted, bright blue-purple flower set in each leaf is the bright face of Venus, the charmer, looking out.

Venus's looking-glass is one of the plants whose whimsical name sets it apart from ordinary flowers and makes it unusual and interesting. It is not actually an uncommon or rare plant; where it grows, it is abundant. But its charm lies not only in its delightful name and legend, but in the shining, pure purple of the flower with its white center and five calyx lobes standing out like a star between the oval petals. Not since violet time have there been such brilliantly blue-purple blossoms in the woods.

Venus's looking-glass is an annual which seeds itself abundantly each June when once again it becomes part of the early summer landscape of Illinois.



SLEEPY CATCHFLY

Silene antirrhina L.

June

Sunny slopes

On the dry sunny slope at the top of the field, there where the fence protects many plants which grow and bloom in the June sunshine, there are thin, wiry plants, two feet tall or so, which open tiny pinkish-white flowers on a bright day. The flowers are very small for a plant so large, yet the whole thing is not coarse, as so many summer plants are, but has the wiry attenuation of a compact plant grown spindling. This is sleepy catchfly, a member of the Pink family.

The little starry flowers open above a large, stiff, somewhat inflated calyx, which stands erect on the stem. The leaves are narrow and tapered, opposite on the jointed stem. And this is the curious thing about the sleepy catchfly. On that slender stem there are patches of brown sticky stuff which serve to prevent ants from crawling up the stem to reach the flowers— a natural flypaper or "tanglefoot" which serves the same purpose as bands of a similar substance put around the trunks of trees.

The flowers of sleepy catchfly are pollinated by flying insects; ants are forbidden. The flowers open only for a short while during a sunny day and usually are closed by noon, hence the common name of sleepy catchfly. There among the tall grasses and coarser weeds the slim stems of the catchfly live out their lives, blossom briefly, make inflated pods of seeds, scatter them, disappear. And on the dead brown stalks on a winter day one may still see the inflated calyces and sticky patches on the stems.



BLADDER CAMPION

Silene cucubalus Wibel

June - August
Roadsides

It came over from Europe—the bladder campion—and seeded itself abundantly along the roadsides. There, in Illinois as in England, the campion late in the afternoon opens its five, deeply cleft petals above the inflated calyx, and blooms in the twilight. Around them hum pale night moths which, in their nocturnal flittings, very likely transfer pollen from flower to flower.

By morning the shining white flowers have turned pale pink and are drooped. The inflated bladder calyx becomes an even more inflated bladder seed-pod and distinguishes this campion from others in the family.

It is a plant which hastily appears in newly opened land. When a lane is put through a woodland, one of the first plants to spring up is the bladder campion. Perhaps it comes as seeds in hay, or they were stuck in mud on wheels—somehow the campion gets there. While it stays along the roads it is not an objectionable weed, but it may cause some difficulties in crop fields, especially the grains, where its seeds need to be sifted from the edible grains before they can be milled.

The bladder campion blooms all summer long. The stems are thin and pale, the leaves opposite and tapered, dark green and finely downy or fine-hairy. The five-parted flowers with protruding stamens and pistil grow in loose clusters at the tips of the stems and new buds often continue to appear from the axils of the leaves.



TALL MEADOW-RUE

Thalictrum revolutum Muhl.

June
Roadsides, woods,
ditches

Meadow-rue is a wind-pollinated plant whose tall stems hold their fluffy plumes of cream-white flowers high above most other vegetation in the tall growth of mid-June. The flower stems grow from a rounded mass of dark green leaflets which look much like a coarse maidenhair fern; the leaves are almost as beautiful as flowers. Then in late May from this tuft of leaves there grow tall, fibrous, leafy stems which often reach a height of five or six feet if the surrounding vegetation is tall, and here, on a fine day in June, the small buds open. There are both staminate and pistillate flowers, the former the fluffier and more delicate, with dangling white stamens. They produce great quantities of pollen which is blown by the wind to other meadow-rue plants to make seed formation possible.

Meadow-rue grows in deep woods as well as in blue-grass glades where the sun comes in and the winds blow freely across the pollen-laden flowers. Sometimes meadow-rue is found in the shadowy oak woods where June leaves make heavy shade; sometimes it is found along a road whose ditch is moist and the roots of the plant are plentifully fed with moisture. But most often, perhaps, meadow-rue is found in an open, woodsy place, not too shady, not too dry, not too wet, where sweet william blooms in spring and the brown thrasher nests in a nearby thorn bush when June is on the land.

The early meadow-rue (*Thalictrum dioicum*) is a smaller plant which is not more than two feet tall. It has more delicate foliage than the above species and is to be found on wooded hillsides. It flowers a month earlier than the taller species.



WHITE SWEET CLOVER (Melilot)

Melilotus alba Desr.

June - July June is the froth of white and yellow sweet clover, the tall and bushy melilot along the country roadsides and in the broad and sunny fields. Melilot is fragrant from the moment the leaves grow in spring to the time, well past its bloom, when the old stalks stand drying in the sun. And the clover hay in the barn is sweet with the memories of June.

June is a clover field—June is all the creatures which live or find their living in and under and over a clover field. It is the dickeissel clacking all day from a melilot head, and swooping to the nest of pale blue eggs hidden on the ground among clover plants. It is the meadowlark nesting at the edge of the field; it is bob-whites finding insects there, and the grey spermophile which comes streaking in a streamlined journey between cars, across the highway and into the shelter and anonymity of the clover.

June is a clover field, and it is the perfume and character of clover, and the long roots which the plants send into the soil. It is the silent, unseen activity of the microscopic bacteria on clover roots, at work in the soil to make nitrogen to enrich the land.

For the June clover field is not all beauty. It is a vast chemical laboratory. It is a crop which does not tear down the soil nor deplete it of its nutrients. Instead, the clover continually adds the beneficial nitrogen which will feed the crops that follow clover in a wisely rotated program. Nitrogen is part of all living tissue, and it is the legumes which, of all known plants or animals, are able to produce it by means of the partnership of nitrogen-fixing bacteria on the roots.



WHITE CLOVER

Trifolium repens L.

May - July Over the landscape, meeting the sky, the clover fields are
Lawns, fields in bloom. The acres of red clover are covered with a
 rich, dusty rose color that is set off by the emerald of
 the nearby wheat and the fluff of wild carrot along the road; and the
 perfume of the red clover fields is a tangible thing, splendid to breathe,
 delightful to taste.

The fields of alfalfa are purple and silver. Their scent is sweet and the butterflies know it. They hover all day over the slender sprays of purple flowers, and the bees are there with a murmuring that is so much a part of a clover field that one no longer is conscious that the sound is there, but would feel the lack if it stopped. And if the bees stopped and went away, the clover would not set its seed.

The white clover on the lawns of city and village are full of round, sweet-scented heads beloved of honey bees and children. The children, as they have done for centuries, perhaps as long as children and clover have lived as neighbors, pick the wiry stems and braid them into wreaths and bracelets, make chains and baskets and ornaments which quickly wilt but retain their sweetness.

The white clover is an old, old plant, as reckoned in terms of cultivation under the hand of man. It is believed to grow wild in all countries of the world; for several thousand years certain clovers have been grown by man. Alfalfa (*Medicago sativa*) is one of the oldest of cultivated plants. Red clover (*Trifolium pratense*) grown for a shorter time historically, but known longer than alfalfa in the New World, came from Flanders to England in 1676 and later came to America. Now under a shining sky and warm sun, the pink and purple and yellow and white fields send a rich and incomparable perfume into the air.



PRAIRIE CLOVER

Petalostemum purpureum (Vent.) Rydb.

June - July

Prairie roadsides

Across the prairies long ago, the summer was a time of many flowers, a time of blossom-brilliance and color. Prairie soil supported a large population of plants which were dependent for growth and life on its peculiar quality. This was deep and black, densely matted with roots; somehow the seeds of prairie plants penetrated this soil and grew. Many of them vanished when cultivation broke the sod and put corn and soybeans in place of grasses and flowers. Some managed to linger only where that prairie sod was unbroken. This gradually has narrowed itself to stretches between railroads and highways and in old cemeteries, and certain rolling land too steep for fields or inadequate for pasture.

It is in places such as these that the delicate wands of prairie clover still are found here and there today. From June until August the rose-purple fingers of prairie clover blossoms wave in the winds and attract the bees.

Prairie clover is in the Pea family with the other clovers, but is not constructed in the manner of the common red or white clovers. The flower is only indistinctly like the butterfly-hooded flower of a clover. In *Petalostemum* the petals are all on thread-shaped claws, four of them nearly alike and spreading, borne on the top of the stamen filaments, alternate with the five anthers. The fifth petal is inserted in the bottom of the calyx and is heart-shaped. The flowers are tiny and are massed in long fingers of flower spikes at the tip and sides of a long, tough, wiry, grey-green stem with tiny, narrow, compound leaves. The entire plant lacks any suggestion of weediness. It is clean-limbed and fine, reminiscent of the beauty of the old prairie when flowers for miles covered the grassy sod.



GLADE MALLOW

Napaea dioica L.

June

**Along railroads and
in woods**

A nymph of the glades, said the botanist who named this rare mallow *Napaea*, because in Greek that is literally what the name means. The glade mallow, however, does not always live in the sandy woodland glades and hollows, as it may in some other parts of the country. In north-central Illinois it has been found inhabiting the wide-open country along certain railroad tracks.

Glade mallow is a tall, roughish plant with very large leaves and very small flowers. This is a reversal of the common mallow procedure which usually features large flowers to which the leaves are somewhat subordinated. But in *Napaea* the leaves come to the fore and are more handsome, perhaps, than the blossoms themselves. The leaves are broad and deeply toothed and lobed, much in the manner of a silver maple leaf. The flowers appear in spreading clusters at the ends of the stems, and are small, five-petaled, white, a few flowers among a great many buds in various stages of development.

In spite of the fact that glade mallow often grows along railroad tracks, it is almost as well concealed in these haunts as it would be in some forest glade. Few people pause to examine the population of plants growing in the cindery ballast or the old prairie soil along the tracks. Perhaps if more such localities were explored for flowers, the glade mallow might not be listed as one of the rarest plants in Illinois.



UPRIGHT BINDWEED

Convolvulus spithameus L.

May - June

Sunny, sandy roadsides

The morning glories and bindweeds belong to a family which is largely tropical; this is true of most creeping and climbing plants, few of which are of northern origin. But the upright bindweed is a morning glory which no longer climbs; it is an upright plant, seldom more than a foot tall and usually less, with a few leaves and a flower or two which seem to be all out of proportion to the size of the plant.

It is a pinkish-white morning glory, with all the crisp freshness of that ephemeral tribe as it opens in the early sunshine of a June morning. The two-parted calyx clasps the tubular base of the widespread, bell-shaped flower. It is the sort of blossom to belong on a lush vine festooned over a fence or tangling itself over a spice bush in the river bottoms. It seems oddly incomplete to be found upon that low little plant.

The leaves are long, narrow, heart-shaped, prominently veined, set alternately on the downy stem. There on sandy banks or in rocky soil along a road in northern Illinois, this surprising little plant—still maintaining its Latin name of *Convolvulus*, which means "to entwine"—opens its large flowers on its small plants from late May until August.

The American bindweed (*Convolvulus americanus*) is a long vine which is common on fences, etc. The flowers resemble those of upright bindweed, above.



SELF-HEAL (Heal-All)

Prunella vulgaris L.

June - August

Lawns, roadsides, woods

Self-heal originally lived in Europe. Before the arrival of Columbus and the following hordes of Europeans who came to the shores of North America and traveled inland, there was no self-heal in all the New World. And now, say the botany manuals, self-heal is found in woods and fields from Newfoundland to Florida and westward across the continent. It is found in gardens and in lawns and, just as efficiently, it grows along the Shenandoah Skyline high in the Appalachian mountains, in Salt Lake City, Utah, in a New Orleans cemetery, or high on the ten thousand foot elevation of Grand Mesa in Colorado. It varies its form somewhat, depending upon its habitat. It may be smaller and more compact, with more deeply colored flowers, or may grow taller and paler. But wherever it grows, the self-heal multiplies and continues its coast-to-coast trek across a continent.

It is at no time a difficult weed. It does not rout grass from a lawn nor flowers from a garden. Rather, it insinuates itself among other vegetation as part of it, and there it is, from late May until frost, as an integrated part of our native flora.

Long ago in Europe, self-heal was often called heal-all or all-heal, and was believed to be the one remedy for every ailment. It was used extensively in early medicine, especially for treating quinsy and croup.

Self-heal has oval, tapering, light green leaves arranged on a squarish stem. The flowers are produced in a square, many-scaled head. The flowers are lavender-purple above and white below. The plant is not more than eight to ten inches high, and in certain situations lies close to the ground.



MOTHERWORT

Leonurus cardiaca L.

June - July
Waste places, farms,
woods

Long after the old farm house and the barns and outbuildings disappear, the evidences of man's presence remain to tell of the past. The lilac bush beside the old stone slab which was a doorstep is still there. The star-of-bethlehem bulbs send up bright green leaves and white flowers every spring. And certain weeds come up every year in the enriched soil of the old barnyard. There are mayweed and jimson weed and tansy, and the rough spikes of motherwort or lion's tail.

Lion's tail is a more appropriate name, perhaps, than the uncertain motherwort, chiefly because the Latin name of *Leonurus* literally means lion's tail. The motherwort is an Old World plant which traveled in the devious manner of so many European weeds from their home base to a new land. Although it is known as a somewhat unpleasant weed because of the skin irritation which contact with its leaves and stems may cause in some people, the motherwort has a degree of beauty which is immediately noticeable.

Here are the ridged, four-angled stems, many-branched and all in bloom. The flowers are arranged in tight, spiny clusters around the stem, actually in the axils of the leaves but appearing in a wreath around the stem from top to near the base of the plant. The flowers are small but clear pink, white, or lavender, or a mixture of all three. The fuzzy little flowers are constructed in the typical Mint family manner.

The leaves are opposite on the stem, but each pair is set alternately with the pair above and below so that all get the sun and the spreading leaves make a four-sided formation when viewed from above.



ELDERBERRY

Sambucus canadensis L.

June - July

Roadside ditches

They called it *Sambucus*, long ago, because that was the Latin name for a musical instrument, and it was known that the stout, pithy stems of elder could be hollowed and made into a rude flute. And *Sambucus*, the elderberry, retains that name to this day.

The pith-filled stems are brittle and fast-growing. Quickly, in spring, the old wood sprouts its leaf buds and stem buds and soon the elderberry bush is covered with compound, graceful, bright green leaves. Then in early June, when schools over the Illinois countryside are letting out for the summer, the elderberry flowers bloom. Here are broad, fragrant, creamy panicles of small flowers with protruding stamens in each quarter-inch blossom in the cluster. Bees come, and butterflies and other insects, for the fragrance of the elder flowers is strong and carries a distance away from the bush. It is at this stage that some connoisseurs gather the heads of flowers, soak them in brandy and sugar for an hour, dip them in batter, and fry quickly in hot fat—elder flower fritters of utmost delicacy and flavor.

In late summer and autumn the creamy panicles of bloom are replaced by heavy, drooping clusters of dark purplish-red-black berries which are devoured eagerly by migrant robins and cedar waxwings, late catbirds and thrashers and other fruit-eating birds. Now others gather the fruits—people who make wine of them, or jelly, or pie. The elderberry tangles are popular places in autumn both for birds and people. The seedy, rather flat-tasting berries become more flavorful with the spark of lemon juice or a little vinegar, and much sugar, in making a pie, or by added pectin or pectin-filled fruit in the process of jelly-making.



WILD CARROT (Queen Anne's Lace)

Daucus carota L.

June - August
Roadsides, fields

It is June and a meadowlark sings in the wheat. On bowed wings he flits with a harsh sputtering and a flashing of white tail feathers to a fencepost across the field. Into the sunshine he thrusts his golden bosom with its great black V inked into it, so that he glints in his pride as he sings over and over again. Beneath him along the fence row are the flat rosettes of snowy Queen Anne's lace or wild carrot, emblem of June. It has delicate clusters of tiny off-center flowers with a single maroon floweret uniquely set in the center of the cluster. Meadowlarks and Queen Anne's lace—these are part of June.

Wild carrot is a weed brought over from Europe. It is a pest when it gets into crop fields, and is then vigorously called devil's weed by farmers who find it difficult to eradicate. Old fields which lie fallow for a year or so may grow up in wild carrot until the landscape is white. Along roadsides and in waste places, the carrot is no longer a pest but is one of the most ornamental flowers of the summer.

The plants range in height from one to four feet with hairy stems which grow from a deep carrot root. The leaves are fern-like and deeply cut, and the flower heads are often four inches wide, composed of many thin spokes which terminate in a small cluster of flowers. The entire group makes a broad, lacy, intricate umbel. When the seeds begin to form, the thin flower stems in the umbel curve toward the center so that the seed-head resembles a bird's nest. During the summer the carrot plants have flowers and seed-heads in all stages of development, until they are ended by the coming of heavy frost.



FIELD MILKWORT

Polygala sanguinea L.

July - August

Upland fields, open hills

This member of the very diversified Milkwort family is, in the manner of most of its members, unlike most of the group. It is a slender little plant with something of the appearance of a spring flower, but it blooms in midsummer in dry, clay soil, usually on dry uplands in company with poverty grass, ironweed, and spiny puffballs.

Field milkwort has thin, angled, pale green stems which branch in the upper part of the plant; on the tip of each branch there is a clover-like head of flowers. The flowers themselves are tiny, and are closely overlapped, arranged like the scales of a pine cone, but are open at the top of the flower head. The flowers are bright rose-purple below and grow paler toward the top of the flower, where they are pale green or almost white. The leaves are narrow and stiff, arranged alternately on the thin stems. Before the flowers bloom the plants are so inconspicuous that they are almost invisible in the wilderness of grass. But when July comes and the uplands bake in the sunshine, the flowers of milkwort bloom, and at a distance the slope is purple with their small magnificence.

There on the upland the field sparrow sings in the hot summer sunshine. The meadow mice continue to cut new runways through the sparse grass and arch the runways with grass-blades to keep them from the all-seeing eye of the hovering hawk. And around the stems of the milkworts the brown mice run, and thriftily garner the milkwort seeds when they drop to the ground.



PERUVIAN DAISY

Galinsoga ciliata (Raf.) Blake

June - September
Gardens, waste places

Somehow, in some way, a long time ago, a little annual plant named Peruvian daisy came from Chile to the eastern half of the United States.

It is a small and insignificant plant to have traveled so far, and it probably is unknown exactly how it came. It is believed, however, to have come from Chile to Europe, and thence to the United States.

There it is, the little Peruvian daisy with its tiny white flowers, growing as a low weed in waste places and gardens and along ponds. The plant is weak and densely hairy, with many-branched stems and pairs of rough, toothed, three-nerved leaves. At the tops of the stems are groups of small Composite flowers—five tiny white three-toothed, petal-like rays around a tight yellow center.

There it is, in dooryards and along weedy roads and in city dumps, an inconspicuous little white-flowered Composite. But it is still a creature of minor mystery. The question of its journeys is still unanswered: when and how did *Galinsoga*, named for an eminent Spanish botanist, find its way from its original home in Chile or Peru, to European waysides, and then back to the New World, for miles north of its old haunt?

Still another story in the past few years has been added to lore of *Galinsoga*. After the bombing of London during World War II, several plants appeared in great numbers in bombed-out ruins and burned areas. One was a fireweed, and another was *Galinsoga*. Someone was curious about where this little plant had come from in such sudden abundance, and what its name might be. The word "*Galinsoga*" was colloquialized into "*Gallant Soldiers*", and today in England it still retains that war-born name in memory of other gallant soldiers in the Battle of Britain.



HORSE-GENTIAN (Feverwort)

Triosteum perfoliatum L.

June
Hilly, open woods.
pastures

It is a strange plant, *Triosteum*, the horse-gentian. In the same family as the honeysuckles, the twinflower, the *Viburnums*, and the elderberry, it seems to have the characteristics of none of these kin. Instead, the horse-gentian grows in gorgeous solitude in the dry upland pasture or the dry wood lot, and produces a tall, stout stalk with long, broad, tapered leaves clasping the downy stem. In the axils of these oddly shaped leaves are clusters of long sepals enclosing the dark maroon, tubular flowers with their protruding, greenish pistils and the shorter stamens. The flowers are an uncommon color among flowers, and last but a short time in May and June.

When the flowers fall away, the long, leaf-like calyx segments remain in star-shaped formation around the stem, and by late summer when the pasture is dry and the woods are crackly with dry heat, the horse-gentian shows bright red-orange fruits in the axils of the leaves. The fruits are brilliant and attractive, but fall away too soon for them to be used ornamentally.

The berries are often called wild coffee. More than a hundred years ago in Pennsylvania—and no doubt elsewhere, wherever the *Triosteum* grows—the dried and toasted fruits of "wild coffee" were used by some of the Pennsylvania Germans as an acceptable substitute for that beverage. The name has persisted to this day.



BUTTER-AND-EGGS (Wild Snapdragon. Toadflax)

Linaria vulgaris Hill

June - October Comparatively few of the native summer flowers of
Roadsides, sands America will bloom along roads and in vacant lots,
 in waste places and dumps and edges of fields. It is,
 oddly enough, the plants brought over accidentally from Europe and
 Asia which are the flowers known most familiarly as summer blossoms
 around towns and habitations. Among them is butter-and-eggs, *Linaria*,
 the wild yellow toadflax.

It might just as well be a native flower: it is elegant enough to belong among American flora. It is closely related to snapdragons and plainly shows the family resemblance in the complicated flower with its snap-shut mouth. The butter and eggs flower is constructed so that no insect may get inside unless it is heavy enough and strong enough to force open the flower. The weight of a bee on the bright, orange-yellow padded lip will force it open. The bee dives head-first inside to get the nectar which has been kept safe from rain and marauding insects, and at the same time the bee with its hind feet holds open the lip of the flower.

The flower is pale yellow, the lip bright orange—color and shape so much like that of an egg yolk that the common name of butter-and-eggs long ago was given to it. Ernest Thompson Seton, the naturalist, tells a story of a little yellow dragon which died when a fried egg—always death to dragons—became stuck in its throat, and he was transformed into the butter-and-eggs plant.

The leaves and stem of this plant are smooth and thin, pale grey-green. It grows in waste places and sandy soil over much of the eastern part of the continent and is commonly found in Illinois.



GREAT MULLEIN

Verbascum thapsus L.

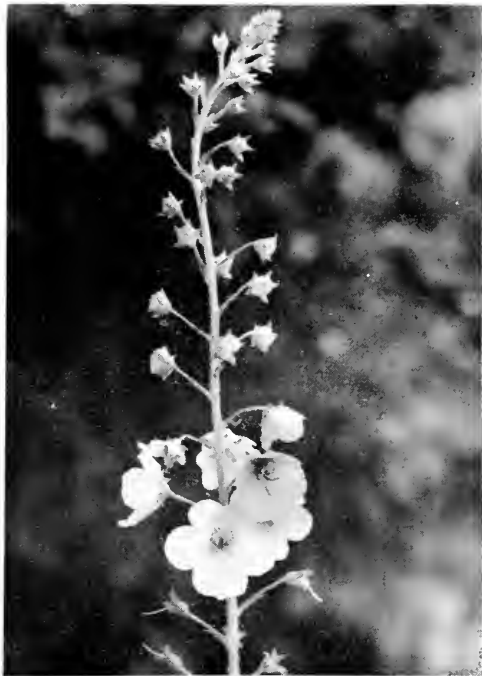
July - August
Pastures, uplands

The great mullein is to the plains and middle-western hills what the saguaro cactus is to the desert—a massive accent upon the landscape, an exclamation mark against the sky. The mullein does not approach the substance or grandeur of the saguaro, but somehow, in the less dramatic land of the Illinois country, it serves much the same purpose of accent.

The mullein begins its year with a broad rosette of leaves which remain against the frozen ground all winter long. The leaves are unique among our plants—very thick, furry, silvery, blue-grey-green, matted with fibers which, under a microscope, appear as violently thorny as any cactus spikes. The mullein rosette is one of the most striking, self-contained objects to find on a winter's day.

In spring the stalk begins to rise from the middle of the rosette and bears smaller, furry, grey-green leaves alternately upon its angled, ridged surface. The stem may grow four feet tall or more before it develops a flower spike. Then the stalk produces dozens of matted, closely set, furry buds from which yellow, five-parted flowers open for a while, then fall away as more open through the summer. The mullein flower stalk always has a rather tattered, unfinished, worn look, as the flowers open here and there upon it without any apparent pattern or plan.

With frosts, the mullein stalks stand bereft of leaves, but the stems are stiff and sturdy, the flower stalks solid, and there the mullein stands silhouetted against the autumn sky. The outline of the mullein now seems much like that angular saguaro which stands stark and dramatic against a desert background.



MOTH MULLEIN

Verbascum blattaria L.

June - July

Uplands, pastures

The mulleins came over from Europe and grew readily in the American landscape. They are ornamental, but even though some of their clan have been civilized to the extent that they appear in nursery and seed catalogs and are planted in some of the best gardens, wild mulleins inevitably seem to be known as weeds.

A moth mullein in an upland pasture may be as interesting as a moth mullein in a garden, and it has the added advantage of being in its chosen haunt. The slim wand-like stems on which the moth mullein flowers are arranged bend in the upland wind but do not break; they have that quality of resilience which open country plants must have or suffer ruin. The leaves are dark green, deeply cut, alternate. The flowers take over the upper half of the stem and stand out from it, each on its own little stem well away from its neighbor. The buds are neatly divided in five parts with the five sepals making a star around the enclosed petals. The flower opens broadly with five rounded petals and a center whose stamens are thickly furred with long purple-red hairs. There are two kinds of wild moth mulleins, the yellow and the white, and the two seldom are found in the same fields. Both are fertilized by small moths which come in the twilight to seek the pale flowers of moth mullein, and sometimes the moths themselves are found asleep in the cupped flowers when the sun comes up next morning.

Moth mullein is a summer flower which blooms at its best in June, then sends up new flower stems later in the summer for a burst of secondary bloom. The dried stems and seed pods remain in the pastures and roadsides all winter long.



HEDGE NETTLE

Stachys tenuifolia Willd.

June - July In flowers of the Mint family, insects are needed to pollinate them and insure a good crop of seeds. The structure of the flower, however, is such that a bee would have a difficult time entering the tube of the blossom without the assistance of the broad lip which is a landing place. In the hedge nettle the lower lip has become a broad, colorful stopping place. At the same time, this elongation makes the woundwort one of the most attractive of the mint flowers.

The plant has glossy green leaves which are opposite on the square, ridged stem. The flowers are arranged in a series of whorls around the upper part of the stem, with a pair of small leaves in each whorl. The calyx is bristly, but not prickly as in the motherwort. The flowers are a bright, soft pink with tiny red speckles in the throat. The broad lower lip is the juncture of the three lower petals, while the arched, hooded upper part of the flower is made of what once may have been the other two petals. Thus the hedge nettle appears to have only two petals, but nevertheless is a mint. Mints are traditionally known to have five corolla divisions even though, as in this case, they may be fused as two or three.

Hedge nettle grows today in low, wet places in sun or shade, along railroad tracks and roadside ditches, during most of the summer. One variety of hedge nettle long ago in Europe was given the name woundwort because its powdered leaves often were used in surgical dressings to bind up wounds.



WOOD SAGE (American Germander)

Teucrium canadense L.

June - July
Along railroads, in
moist fields, woods

Wood sage is a member of the Mint family, or Labiatae, meaning the Lipped Ones. Most members of the family, a very large one and very diverse in form, yet always unmistakably mints, have a four-sided, squarish stem. Their leaves are opposite, the flowers intricately constructed with a tube and a flaring lip. Usually there are five parts to the corolla, with two parts above and three below, but varied by innumerable plans of fluting, laciness, or color. The stamens are inserted on the tube of the corolla, and the pistil usually curves with the curve of the tube, arches under the two upper corolla parts, and protrudes with a double lobe at the end. This neatly comes in contact with pollen on the fuzzy back of a small bee or other insect which has gone into another mint flower for nectar and has had pollen brushed upon its back. The insect enters head first, eager for the nectar at the bottom of the tube. The pistil is encountered first; this removes pollen from the bee's back. The insect pushes further in and gets its nectar, and in backing out comes in contact with the low-hung stamens full of pollen. This is carried to another flower.

Wood sage has the characteristics of the family—a tall, stiff, greyish, four-angled stem, and a degree of aromatic quality, but not as much as some other mints. The leaves are thick, finely toothed, opposite, and the stem terminates in a long, tapering wand of pale lavender-pink flowers whose throats have deeper pink or red speckles and guide lines. The buds further up the spire are arranged systematically, like a pagoda. The flowers begin to bloom from below, but the entire stalk seldom is in bloom all at once. Wood sage grows in woods and lowlands and blooms abundantly most of the summer.



FOG-FRUIT

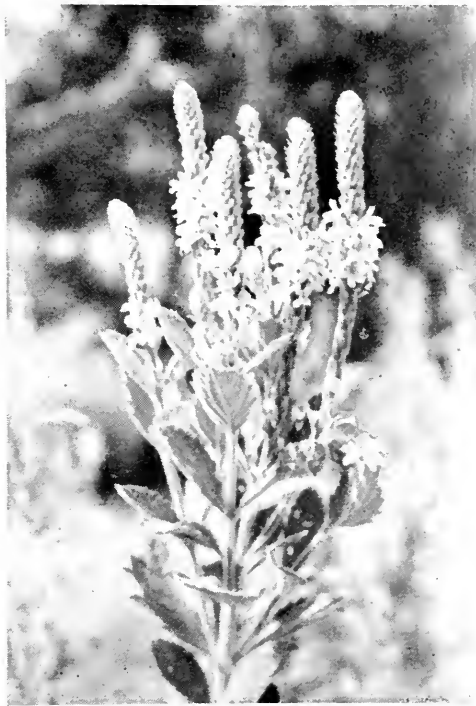
Phyla lanceolata (Michx.) Greene

June - August
Along ponds, damp
places

The margin of the pond has its own peculiar plant life which grows among the grasses bending over the water. There is *Eclipta* and there are calamus beds, and a few cattails, perhaps some swamp milkweed. And there, low and almost invisible but very much in evidence from a frog's eye view is the little fog-fruit. It is related to the verbenas and if its flower head were enlarged a few diameters it might be admired as a most handsome wild flower.

But instead it has several pairs of rather coarse leaves like vervain leaves, and slender stems topped with miniature bouquets of flowers. The blossoms are tiny and pinkish white or are entirely white, arranged neatly around a purplish, cone-like center. Many a child has gathered the tiny hand-bouquets of the fog-fruit to make corsages or doll-house table decorations of them. They are miniatures which are not very noticeable when viewed from the superior height of an adult walking through the pond-side grass.

But down at their own level they have a degree of small beauty which lies in that certain perfection of a successful plant in its chosen habitat, and the interest which large mortals find in looking at something small and perfect and complete.



HOARY VERVAIN

Verbena stricta Vent.

June - August
Upland pastures

There are only a few wild verbenas in America as compared with the numbers of the family in the tropics where most of them are found. Of the verbenas east of the Rockies, it is the vervains which predominate as well-established weeds.

Of them all, perhaps the hoary vervain is most beautiful. Its flowers are bright blue-purple, five-parted and tubular, much like the individual flowers of the garden verbenas, except that in the vervain they are arranged in stiff spikes at the top of the plant. The flowers begin to bloom from the lower end of the spikes and continue to bloom for many days until they have reached the top. The leaves are thick, downy-hairy, toothed, grey-green, and the plants are tall, stiff, and well fitted to withstand the hot sunshine of the upland pastures and dry, weedy hills where they are most frequently found.

The vervains in Illinois are varied. White vervain (*Verbena urticifolia*) is a fine-hairy plant which often reaches a height of five feet or more in moist places. The leaves are coarsely toothed, dark green, and hairy. The flowers are tiny, white, and are produced on loose, spreading spikes. In sandy ground is found the narrow-leaved vervain (*Verbena simplex*). Blue vervain (*Verbena hastata*) is common in wet places with swamp milkweeds and tickseed sunflowers. The flowers are bright purple and the plant is slender and much branched above.



COMMON MILKWEED

Asclepias syriaca L.

July - August

Damp places, roadsides

The tall, splendid milkweed plant along the weedy road is one of the most remarkable plants to be found at any season. It is extremely complicated in its flower mechanism, bears a milky juice which is akin to caoutchouc (the sap of the rubber tree), has silk-tufted seeds whose fluffs have been used instead of kapok, is edible as a young plant but poisonous to cattle when the plants mature.

The milkweed stalk grows early in spring from a deep, perennial tap root. The young shoots are soft and downy, full of that typical milky juice which flows from any cut on the plant. In June there appear tight clusters of angled, round buds arranged in a mosaic so that each bud gets sunshine. They burst, and now there is a wonderful globe of perfumed, intricate blossoms. The flower is composed of five nectar horns with a keyhole-like niche between, and five recurved sepals. When a fly or bee comes for nectar, it cannot get a foothold on the lightly poised flower, so almost invariably its foot slips into the niche between the honey horns. This holds the insect firmly while it sips nectar and at the same time, in its struggles to free itself, scrapes off pollen sacs obtained from a flower previously visited. Usually the insect is able to free itself by pulling its foot upward and out, and flies off with new pollinia to carry to the next flower. Often, though, the insect is trapped and hangs there dead.

Although there are dozens of flowers in the cluster, only two or three are properly pollinated and these form the large downy pods full of silk-plumed seeds. The pods open in autumn, and the silk-parachuted seeds float off to other places to plant more milkweeds for the coming year.



SULLIVANT'S MILKWEED

Asclepias sullivantii Engelm.

July

Prairie roadsides

The wet prairie, descended from Pleistocene swamps and lakes, basically contains water-growing plants.

In the succession of plant species, as the shallow lake filled with vegetation, there came the cattails, the sedges, the bur-reeds, which made it a swamp. When the tall plumes of *Spartina* grass appeared, this was the signpost indicating a change to wet prairie, and with it came an entirely different group of plants. For miles, long ago, the wet prairie with its waving *Spartina*, its bright prairie sunflowers and white indigo spikes, extended across much of Illinois. As part of it, in this peculiar association of plants, soil, and climate, were the stiff stalks of *Sullivant's* milkweed. Today, as yesterday, it is as much an indication of the wet prairie as the *Spartina*.

This is a stout, smooth milkweed which is distinguished from the common milkweed by having broad, blue-green leaves conspicuously veined with pink, with a great, thick, pink midrib. The stalk is smooth, pink and green-white, and bears the fluted leaves in stemless pairs along it. At the summit are large, globular clusters of typical milkweed flowers, but the individual blossoms are larger than those of common milkweed. They have the typical five horns and recurving sepals—the latter deep rose, the former bright pink. The intricate and prominent veining of this milkweed, however, is one of its highlights and one of its chief distinctions. That, and the presence of the remnants of wet prairie, placarded by *Spartina*, where the splendid columns of *Sullivant's* milkweed are found.



POKE MILKWEED

Asclepias phytolaccoides Pursh

Summer

Prairie roadsides,
sands, woods

There are three milkweeds which are widely different yet contain as characteristics the basic requirements of a milkweed—milky juice, opposite leaves, intricate flowers designed in such a manner that insects often are trapped during the process of pollination.

Green milkweed (*Acerates viridiflora*) is a plant of the prairies and dry soil. Although it is not as colorful as some of the other milkweeds, its delicate green flowers nevertheless are decidedly ornamental. They lack the horn structure of other milkweeds. The flowers are tightly held, green and white blossoms arranged in a whorled cluster in the axils of long, narrow, veiny leaves.

Blunt-leaved milkweed (*Asclepias amplexicaulis*) is a plant of the sand country, a plant of utmost economy of leaf, flower, and fruit. The short, pale stem seldom has more than three pairs of stemless, pale green, pink-veined leaves. The lowest pair usually is much smaller, and all six are fluted, thick, and large. Above them stands the stiff stem topped with typical milkweed flowers held apart from each other in a sparse cluster. The flowers are pale pinkish-white with green sepals. Usually only one or two large seed pods result from the head of flowers.

Poke milkweed (*Asclepias phytolaccoides*) is a lanky, thin-leaved plant of the deep woods. In mid-summer its green and white and pale pink flowers are in bloom among the plants on a half sunny, half shady, dry hillside in the oak woods.



BLUNT-LEAVED MILKWEED

Asclepias amplexicaulis Sm.



COW PARSNIP

Heracleum lanatum Michx.

July

Low places, roadsides

This, the king of the parsnips, is a regal plant. Huge, stout, massive, the corded, hollow stems support the great broad umbels of small, snowy flowers. The leaves are among the largest found in our wild flowers, leaves which are deeply cut, hairy, enormously maple-like on a grand scale. The structural grandeur of the cow parsnip caused it to be dedicated to the giant Hercules. There is *Heracleum*, flower of Hercules.

It grows in wet places. It needs moisture to nourish all those stout Corinthian columns which are stems, all those splendid, classical, acanthus-like leaves, that broad bouquet of tiny blossoms spread almost a foot wide across the top of the flower stalk.

It is a widely distributed plant. According to Gray, it is found in wet places from Newfoundland to the Pacific and northward to North Carolina, Kentucky, and Kansas. That is indeed a broad range not frequently repeated by many American plants. Few of them are scattered from coast to coast in the manner of this massive plant of Hercules.

It comes in June, comes at a time when growth is lush and heat grows stronger every day. Now is the weedy time, the time when the small compactness of spring flowers is well past and only the big, the strong, and the lusty survive in the battle for space and sunlight which takes place in June. Sturdy and able to combat encroachment of other plants, the cow parsnip stands regally alone.



WILD PARSNIP

Pastinaca sativa L.

June - August
Roadsides, fields

A very long time ago in the period when Roman culture was the most important way of life in the limited scope of the world of that time, there grew a biennial herb in the Italian fields and roadsides. The Romans knew it as *Pastinaca*, from *pastus*, which means food. And their name many centuries later influenced formation of the word which we know as parsnip. The Latin *Pastinaca* still is accepted in modern botany as the scientific name for our wild parsnip. Although in the wild state the wild parsnip's thick tap root was considered slightly poisonous, in cultivation it apparently lost that attribute and became a prominent food in European countries. Parsnips then, as they are now, were a winter vegetable which was not considered really edible until after it had been frozen in the ground. The usual way was to dig parsnips after frost, bury them in a heap of loose leaves and earth, and dig in after them when a dinner of parsnips was desired. They were one of the very few winter vegetables available to people long ago before preservation of fresh summer vegetables was possible.

Somehow, as so many other European plants did, the wild parsnip came to America. It grew readily in New World soil and by means of its abundant seed production, it spread rapidly.

Today in mid-summer the stately, aromatic, channeled, columnar stem of the wild parsnip grows taller and taller into the summer sunshine. The leaf-stems clasp the stalk; the stalk itself branches many times, and the leaves are long, compound, bright green. At the tips of the stalks are broad, flat umbels of brassy-yellow flowers arranged rather beautifully so that all the flowers are spread to the sun.



HORSE-NETTLE

Solanum carolinense L.

June - August Pastures When the plows and gardens of the east moved westward—when the rutted wagon trails traveled deeper and deeper into the sod and further and further into the far west, certain plants and insects backtracked, following the pathway of cultivation to the east.

One of these was the yellow-flowered buffalo-bur (*Solanum rostratum*) and another was the closely related white or lavender flowered horse-nettle. With these came the potato beetles, and it is believed that through the distribution of these plants this insect came into the farms and gardens of the eastern states which never had known them before.

Horse-nettle is a thorny weed with small, yellow, tomato-like fruits the size of a large cherry. They are not enclosed in a husk, as the ground cherry is, with which it is sometimes confused. The plant is a member of the Tomato-Potato family, the nightshades or Solanums, and the flower, resembling those of this family, in itself is crisp and pretty.

Potato beetles feed as avidly upon the spiny leaves of the horse-nettle as they do upon the more succulent leaves of the potato. The beetles knew these wild Solanums long before they learned to devour potato plants. From the Great Plains and the foothills of the Rockies, the horse-nettle, with its usual accompaniment of beetles, then came eastward into plowed land. The potato fields were invaded.

Horse-nettles are common in waste places in Illinois. The yellow fruits are noticeable in late summer and autumn. They are eaten by only one mammal, the sheep, which seems unharmed by a degree of toxicity found in horse-nettle seeds and leaves. The fruits are not recognized as an edible wild fruit for human consumption.



EVENING PRIMROSE

Oenothera biennis L.

Summer

Roadsides, fields

Softly in the twilight the four silken petals of the evening primrose moved apart from the tapered formation of the bud and with a silken sound they lay open to the moths of dusk. All day the long-tubed yellow buds were tightly shut, but towards late afternoon there was a visible swelling, a pulliness. As sunset came and a softer light spread over the roadsides, the buds quivered, the calyx skin parted soundlessly, and in a minute or two the flower had opened. In comparatively few flowers can the actual parting of the bud and the opening of the petals be observed. In the primrose it is rapid, it is impressive.

The plant of the evening primrose is downy and grey-green, a stoutish stem growing from strong fleshy roots. It is a biennial plant—it grows from seed the first year, blooms the second year, then dies when frosts come. The leaves are grey-green, soft, widely toothed, attached alternately to the stalk. From axils of the leaves spring the buds, which also are densely clustered at the top of the stalk. They are of many sizes, so that their blooming covers a long period in summer. Each day two or three flowers bloom, last until the hot sun hits them next morning, and hang drooped and finished. By evening more buds have grown large enough to bloom. They are fertilized by night-flying moths which are attracted to the paleness of the light yellow flowers as they gleam in the dusk. The flower is at the end of a long tube above the ovary where seeds form, is four-parted, has eight, powdery white stamens and a pistil with four spreading divisions. It is found commonly along country roads and in waste places, blooms from June to October, and is widely scattered throughout the countryside.



WILD BERGAMOT

Monarda fistulosa L.

July - August
Roadsides, uplands

A crisply erect, square-sided stem with velvety, opposite leaves and a mass of pale orchid-lavender blooms at the top means wild bergamot. Perhaps it is a weed. Its growth has that sturdy, unconquered vigor which is associated with weeds. Yet in its own haunts along fences and dusty roadsides, it is not truly a weed, but a native wild flower with both charm and beauty.

The roadside flowers have a very special place in the picture of the open country. They are remnants of the greater horde which, before the days of steel plows and farms and highways, were massed in a tremendous burst of color which stretched for miles across Illinois. These today are only a few; but in themselves they are enough to tell a tale of early autumn. The coloring and pattern of the bergamot flowers is contrasted with the fluffy white tops of thoroughwort and mountain mint, with heath asters and wreath asters and the spires of vervain, with the royal purple of ironweed, and the hosts of sunflowers, large and small. These make even dusty roadsides beautiful.

The bergamot flowers are arranged in a round head at the top of the stalk and in each flower as it opens there are two stamens which stand tall. By the day after, the pollen is nearly all shed and the stigma, the top of the pistil, has appeared. A few hours later the shrunken anthers have fallen forward and the two stigma tips occupy the same place, ready to receive pollen brought by visiting insects. It is an arrangement which prevents self-pollination in the bergamot.



TICKSEED (*Coreopsis*)

Coreopsis lanceolata L.

June - August
Prairie roadsides

The *Coreopsis* flowers are plants of the prairie, sun plants which soak up the growing heat of the sunshine from June almost all the way through the Illinois summer.

The flowers have a quality of scintillating brilliance which one finds in the bright blossoms of buttercups and sneezeweeds (*Heleniums*). There is a sheen of gold overlaid with sun-sparkle. The flowers are slightly cupped, a golden center surrounded by petal-like rays which are deeply toothed in ornamental fashion. The calyx is brassy green-gold, very smooth and glossy, the stem shiny, the long narrow deeply cut leaves bright green and slightly hairy.

This is the *Coreopsis* which has become a member of the garden society. Perhaps, as in the case of many other plants, this cultivation of a prairie plant took place after the seeds were sent to England by early plant explorers, developed somewhat, and were sent back as something new and fine and exclusive, to be planted once more in the soil of America.

There are many tickseeds native to Illinois, but of them all, only *C. lanceolata* seems to be cultivated. The others vary from showiness equal to *C. lanceolata*, to lank weediness and small flowers.

The palmate tickseed (*Coreopsis palmata*) grows on the open prairie and in low places. The stiff plants bear one, seldom more, bright yellow, flat blossoms. The leaves are deeply and palmately lobed, dark green, opposite on the stiff stem.



PRICKLY-PEAR CACTUS

Opuntia rafinesquii Engelm.

June - July Where the fine sands of old Illinois dunes and sand fields in the river regions bake under the summer sunshine, the silken yellow petals of prickly-pear cacti bloom briefly and are done. They are plants of the sand, natives of that sparse and typical vegetation which is able to exist here. Long traveling roots serve to hold the sands in place and draw up moisture, and the structure of the plant makes it possible for it to survive in an exacting habitat.

A cactus is well suited to far more arid regions than this. The plant has no leaves to wilt in the heat. Instead, the stems are enlarged as fleshy pads in which much water is contained. True leaves come forth on the young plants and appear as tiny sprouts which fall off almost at once. The clusters of thorns and bristles on the cactus developed from leaf buds which, through a response to dryness, became thorns. The broad fleshy green stems or "pads" of the prickly-pear carry on the leaves' function of manufacturing food.

In winter the cactus plants look shrunken and dead, but by June the shriveled old plants take on new life. Buds jut from the top curve of the pads, beautiful, sculptured, conical buds whose lower receptacle is studded with prickles. The flowers open into one of the most beautiful of all blossoms, a shining, shimmering, butter-yellow, silken flower with an orange-brown patch at the base of each petal. In the center is the quivering, lightly set mass of bright yellow stamens. The fruits are the ripened receptacles of the flowers, turned dull red and edible in late summer. Indians long ago learned how to pick the prickly-pears and rub off the stinging hairs and thorns before eating the fruit.



GOLDEN-ASTER

Chrysopsis villosa (Pursh) Nutt.

**June - August
Sands**

In the sand country in midsummer, and well into September, the slopes of old dunes and the wind-blown roadsides are bright with the yellow flowers of golden-aster. The flowers are an inch wide with numerous yellow rays around a center of yellow stamens and pistils, dandelion-like blossoms held erect to the sun. "Aspect of Gold", the Greek name denotes, and the sand country does indeed take on a golden aspect when *Chrysopsis* blooms.

It comes at a time when the full blaze of summer Composites has not yet made its appearance; yet there is about the plant the look of a late-flowering plant, like a small double sunflower somehow misplaced among the sands. Golden-aster, however, is not even a true aster, though still a Composite; no true asters are yellow. The leaves are densely hairy and rough, and are placed somewhat spirally around the brittle, hairy stem.

The roots go deeply into the yellow-brown sand. Here the golden-aster is an integral part of the landscape, there along the Illinois River and other streams near which the glacier left acres of sand. These sands became anchored by clumps of prairie grass and the traveling roots of rabbit's bean and cacti, by the roots of wild indigo and lead plant, and by the thousands of stiff, two-foot plants of golden-aster. Without these essential plants the sand perpetually would shift in the incessant wind; there would be no stability of the landscape, no roadside safe from drifting dunes which inexorably move under the finger of wind to places elsewhere, grain by grain, heap by heap, onward across the countryside. Plants like golden-aster provide anchorage as well as summer color in the Illinois country.



NEW JERSEY TEA (Redroot)

Ceanothus americanus L.

June - July The army of George Washington had a hard time keeping supplies coming through to the lines. Times were difficult and the pinch of hunger and cold made itself felt too often for the good of army morale. But something hot to drink, something aromatic and something that reminded men as closely as possible of the politically unpopular Oriental tea on which the British set a high tax, something like hot tea poured steaming after a long march, was vital to the army. They wanted hot tea, and they got it—Labrador tea if they were near the sphagnum bogs of New England, and yaupon and cassena holly tea if they were in the south, sweet gale tea along the coasts, catnip tea or goldenrod tea or sumac tea, or tea made from sassafras or sweet birch. But the tea made from the dried or green leaves of New Jersey tea, it is said, pleased the weary soldiers and was used extensively during the American Revolution. It also was used in colonial households which were in sympathy with the Cause. Many years later during the Civil War, the same plant provided tea in times of shortage or blockade.

New Jersey tea, in spite of its eastern name, is found rather frequently in the dry hilly woods of Illinois. Here it makes a low bushy shrub seldom more than two or three feet high, with many slender woody stems springing from the base. It has dark green, veiny, oval leaves and clusters of fluffy white flowers, like tufts of white foam or ivory snowflakes clustered on twig-tips. The flowers are fragrant and attract many kinds of butterflies and other insects. The deep ruddy root is used to make a bright red dye; it gives the plant its other common name, redroot.



HAIRY RUELLIA (Wild Petunia)

Ruellia humilis Nutt.

July

Sands, dry roadsides

It is a strangely diverse family, the Acanthus family. Several thousand years ago one of its members, known even then as the Acanthus, inspired the most ornate of the three types of architectural columns in ancient Greece, the Corinthian with its capital designed after the curving Acanthus leaves. In the United States the family is limited in its numbers. There is the water willow with its small orchid-like flowers; the Dyschoriste of the southern pine barrens, and the Ruellia of Illinois. And here there are two Ruellias which are patterned along similar lines but grow in entirely different habitats.

Hairy ruellia is a plant of dry, open prairie. Smooth ruellia (*Ruellia strepens*) is a plant of moist, shady, bottomland woods. But each has the typical, opposite, oval leaves and tubular, lavender flowers which often are called wild petunias because of their similarity to that popular flower.

Hairy ruellia grows about a foot high or less and is very hairy. Its leaves are dry; the plant can withstand much heat and dryness without wilting. The flowers spring from the axils of the leaf-pairs, are blue-lavender, and last but a day. The smooth ruellia (*Ruellia strepens*) is a taller plant, often three feet high, with juicy, dark green, smooth leaves and stem, and pink-lavender, petunia-like flowers springing from the axils of the leaves and lasting but a day. Hairy ruellia is typical of edges of golf courses and dry banks along roads. Smooth ruellia is found in river woodlands and other moist woods with deep summer shade. Both bloom in July.



LACINIATE EVENING PRIMROSE

Oenothera laciniata Hill.

June - July Where the yellow-brown sands of the glacial outwashes
Sandy fields near the rivers blow in a fine sifting whenever a breeze
 is about, the hairy stalks of laciniate evening primrose
 stand up compactly. In a specialized environment they live successfully,
 manufacture food, blossom, make seeds, summer after summer as long
 as their chosen habitat of sand remains.

A plant which lives in sand country must survive where many other plants, transplanted there, would perish miserably. Over the sands, sunshine is far more intense and hot, the light stronger, than it is in grasslands or in woods. The sand in summer is dry and becomes much hotter under a long day of sunshine than black soil or grass. Water filters quickly through sand, though it may remain far below the quickly drying surface. Winds are more violent across the unprotected sands and the unstable sand moves in a blur which batters the glass-hard grains against any plant standing there.

Consequently a plant which lives in sand country must be especially fitted to live there. It must have a deep root or traveling roots to provide stability and seek out water. It must be able to withstand the strong sun and dryness by having hairy leaves which frequently turn themselves vertically so that they do not get the full force of the sun.

All these qualities are possessed by the little evening primrose which blooms in midsummer. The flowers open in late afternoon and are fertilized by small, pale, night-flying moths which are attracted to the pale yellow flowers. These have four petals above a long tube; eight stamens, and a four-parted, cross-shaped pistil. The leaves are hairy, rough, and deeply laciniate or toothed.



PARTRIDGE PEA

Cassia fasciculata Michx.

July - September
Sandy fields,
roadsides, ditches

Although the leaves of partridge pea are not as sensitive to touch as those of the related wild sensitive plant, they nevertheless have a degree of response which causes the thin little leaflets to move together when stroked down the midrib.

Partridge pea with its slender stems and soft little compound leaves is one of the common yellow flowers of summer. In sandy fields and along country roads, in the grimy black coal dust of the coal mine country of southern Illinois, on the strip-mine tailings in northern Illinois, in poor soil and under poor conditions almost everywhere in the state, the partridge pea blooms from July until late September.

The flowers are of irregular shape with five bright-yellow petals marked with a purple spot at the base of each, and a cluster of black-purple stamens and curving stiff pistil in the center. The asymmetrical shape not only is interesting, but it is unlike the more compact, pea-shaped flowers of the Pea family to which it belongs. Partridge pea produces long, flat, thin green, then brown, pods with small brown seeds which are eaten by bob-whites and other seed-eating, ground-dwelling birds in Illinois.

Wild senna (*Cassia marilandica* L.) grows three feet tall at the edges of woods and in low places in woods near water. The stem is tough and woody with long silky fibers running the length of the stalk. The leaves are compound and resemble those of black locust, and the flowers, shaped a good deal like those of partridge pea, are a deeper, more orange yellow with purple stamens, and are smaller, held in large clusters near the top of the stem.



ORANGE BUTTERFLY WEED (Pleurisy Root)

Asclepias tuberosa L.

July
Sands, prairie roads

Plant of the sand country, blossom of the sunny prairie, denizen of broad sunshine and dry soil, the orange butterfly weed sets a spot of brilliant

pigment on the prairie. The plant makes a broad, spreading bush of many stems which spring from a very deep, stout taproot, or stands, a single stalk, with that unmistakable mass of bright orange blossoms at the top. The small flowers grow in a spreading head to which butterflies and other insects come to sip the nectar.

As in the case of other milkweeds, the butterfly weed has complicated flowers which are designed to prevent the entry of ants and other crawling insects. The hairy stems, besides, further prevent insects from climbing up to the flowers which must be pollinated by flying insects alone. But although the flower is typically that of a milkweed and so are the leaves, the butterfly weed has no milky juice.

Butterfly weed, like many milkweeds, has toxic qualities in its acrid juice, but because of the distasteful flavor and the hairy stems, few if any animals will eat them and thus do not suffer from poisoning. An old remedy for pleurisy once was obtained from the stout, deep root, hence the name of pleurisy root which is often given to the butterfly weed.

But the latter name is much more appropriate today on the hot and sunny prairie or across the wind-swept sand fields of the river country. For the butterflies know the brilliant orange flowers of butterfly weed and gather around to sip nectar, so that almost always one may see at least a butterfly or two in the vicinity of any clump of butterfly weed.



POPPY MALLOW

Callirhoe triangulata (Leavenw.) A. Gray

July - August Along the roadsides and in the black oak woods of the
Sands sand country there blossom in summer the bright
 flowers of poppy mallow. It is a color and a form not
 common in this part of the country; and the poppy mallow is so splendid
 that it might seem to be a garden flower escaped to the woods.

Poppy mallow is fairly common in the sand country, especially
 along Route 100 between Beardstown and Meredosia, and further north
 in the sands of the Havana region. It is one of the plants typical of the
 sands; in a haunt restricted to a specialized flora, it stands out as a
 beautiful flower.

The flowers are the typical mallow form—five petals, squared off
 and notched, arranged around a center composed of a club-shaped concen-
 tration of stamens and pistil. The petals are a silky, glistening, bright
 magenta-rose or lavender-rose, occasionally pure white. They stand erect
 on thin, wiry stems on plants which sometimes recline upon the sands.
 The upper leaves are narrow or three-parted, the lower leaves long and
 triangular or halberd-shaped, the lowermost heart-shaped. Many forms
 of leaves appear on one plant. They are thin, waxy, rough, and dark
 green.

Poppy mallow is found in the sandy black oak woods where New
 Jersey tea, rabbit's bean, lead plant, aromatic sumac, and prickly pear
 cacti are common. It blooms from June throughout August.



COMMON WHITE WATER CROWFOOT

Ranunculus trichophyllus Chaix.

June

Swamps, lakes

To submerge many a terrestrial plant is to drown it, but certain plants are peculiarly fitted to live underwater and cannot survive long elsewhere. In slowly moving streams and broad, shallow swamps there lives the white water crowfoot, a member of the Buttercup clan, whose entire plant, all but the flowers, is submerged.

In needing sunlight and air for blossoming, the white water crowfoot admits its kinship with land plants. Although it needs water for its roots, stems, and leaves, the flowers must rise on tall stems above the surface of the water in order to bloom and make seeds.

The flowers look like glistening white buttercups. They are scattered like shining stars over the bright water and invite flying insects which come to pollinate them. The centers of the white flowers are clustered thickly with stamens around a compound greenish center of many pistils, where the seeds form. This is the ancient pattern of the prehistoric buttercup, ancestor of all other flowers.

The ripe seeds fall into the water and sink to the mud. Here they germinate, send out roots into the ooze, send up stems with finely cut, water-loving leaves, and, at last, there come stems which go upward into the sunshine and spread their blossoms in the open air.



PICKERELWEED

Pontederia cordata L.

Summer Swamps Bright blue in the morning sunshine which sparkles across the dew-wet marsh, the flowers of the pickerelweeds open to their fullest beauty. The flower is almost orchid-like, yet is related to the water hyacinth of Florida (*Eichhornia*). The petals are bright lavender-blue accented by two yellow spots near the opening of the flower. Since blue apparently is the color most attractive to bees, the yellow spots must be guideposts to lead the bees to the nectar and, incidentally, to the stamens and pistils. Pickerelweed flowers have three types of stamens and pistils, long, medium, and short, each kind found in different flowers scattered through the swamp. It was proved by Charles Darwin, through exhaustive experiments, that pollen from long stamens must fertilize long pistils, just as pollen from medium or short stamens must fertilize medium or short pistils. As the bee enters the flower of the pickerelweed the pollen from each type of stamen, whichever may be in that particular flower, touches the head, chest, or abdomen of the bee. As the bee enters other flowers, the long, medium, or short pistils touch whichever spot of pollen came from the long, medium, or short stamens; in this way the most efficient production of healthy seeds is made possible.

Pickerelweed flowers are at their best early in the day. By afternoon the delicate petals have curled up and are purplish and dull, are not blue and bright. The pickerelweed stalks still have a look of blueness but it has none of that sparkle of the morning blue, when the red-wings and marsh wrens are all singing madly in the sunshine and the white egrets, up from the south, fly on wings of unearthly white across a morning sky.



ARROWHEAD (Wapato. Duck Potato)

Sagittaria latifolia Willd.

Summer Swamps, ponds

It is midsummer in the marshes. The cattails are tall and are full of heavy brown seed-heads. Mallows blossom along the shores, smartweed is bright pink, the arrowheads are in bloom. Their plants fill the shallows and stand on the muddy shore. They may live at the water's edge or stand with the stems half submerged. And down in the mud is the thick white root-stock which the Indians knew as something edible, a starchy tuber they called Wapato or duck potato. This the women went out to gather in late summer and autumn when the starch was well stored in the roots. The women went into the muddy shallows and grabbed about with their toes and hands to uproot the "potatoes", and gathered them in when they floated. They were grated to make cakes or were roasted in hot ashes.

The leaves of arrowhead are so distinctive they are never mistaken for anything else. They are large, thin, veiny, in the shape of a large arrowhead or spearhead. There are many variations in *Sagittaria*—narrow little leaves without the flanges, tiny, narrow arrow-shaped leaves, very broad leaves, some with short flanges or long flanges. *Sagittaria latifolia*, however, is the typical plant of the family and is the one found most commonly in Illinois ponds and swamps.

In July and August the arrowheads send up stout, pithy flower stalks set with round green buds arranged in threes in tiers up the stem. The buds open, and sparkling white flowers with three crinkled snowy petals glisten in the sun. They are arranged around the tight heads of green carpels or yellow stamens in a ball-like or somewhat flattened center.



WATER HEMLOCK

Cicuta maculata L.

Summer

Swamps, ponds

When midsummer comes with the full force of July, and the moist places grow less moist and the dry places bake in the sun, the water hemlock blooms along the grassy, wet edges of ponds and swamps.

Water hemlock resembles that ancient plant, the poison hemlock, which grows in America as well as in Europe. In Greece long ago the juice from the root of this plant was extracted and used as a deadly poison for executions of people of honor. It was the hemlock derived from the poisonous root of this plant which was given to Socrates in the year 399 B.C.

The root of water hemlock also is poisonous, but not as deadly as its kin, Conium, whose bitter potion the philosopher drank. Water hemlock grows about three to four feet tall and is a bright dark green with slender branching stems. The leaves are abundant; it is a bushy plant. The leaves are compound and finely saw-toothed, and as in other members of the Parsnip family, the flower umbels are borne at the tips of the leafy stems. The flowers are white, tiny, in separate heads in the spreading umble, and are slightly fragrant. It has a wide range. According to Gray, it is found from Newfoundland to Virginia, and west across the continent to the Mississippi. It has several other names, a point which is proof that the plant is common and widely known. Beaver poison is one of its names, or musquash root, or spotted cowbane. Apparently its poisonous root is dangerous to the incautious muskrats or beavers which dig them out.



BUTTONBUSH

Cephalanthus occidentalis L.

Summer River swamps

Along the backwater shores of the river, the buttonbush puts out its honey balls for mid-summer bees. Buttonbush is a low shrub of the wet lands, of the black, caked, alluvial soil remaining after floods or, its roots in the water of a black swamp, spreads bright green leaves to the hot sunshine and sends rich fragrance into the thick, swamp air.

There in the swamp, there along the river, when midsummer makes low water and muddy shores, the buttonbush is part of a picture of that wild country. Here the green heron nests in an overhanging willow; here beneath the buttonbushes the young wood ducks come to hide after a swim in the shallows; here in the bushes themselves the tiger swallowtails come to sip buttonbush nectar. Redstarts chitter endlessly all day long in the tall maples along the river; a water snake slithers across the mud and beneath the buttonbushes, winds itself up in the branches and waits for a prothonotary warbler to pass singing that way. This is the kind of country the buttonbush belongs to, is part of—and forms that important middle strata above the low plants and the tall trees in the river swamps.

Buttonbush is in the same family as coffee and cinchona (quinine), partridge berry, bed-straw, and bluets, a most diverse family which comes botanically between the plantains and the honeysuckles. Buttonbush has the typical opposite leaves of the Madder family. The flowers spring at right angles from the axils of the leaves and are composed of a globular mass of tubular creamy white, extremely fragrant flowers whose long protruding stamens and pistils give each flower-ball a pincushiony, fluffy appearance of great beauty.



HALBERD-LEAVED ROSE MALLOW

Hibiscus militaris Cav.

Summer Swamps, ponds

In late summer when the water level nightly falls in ponds and swamps and rivers, and when the tall white egrets come wading in the shallows of the marshes, the halberd-leaved mallows bloom. Early in the bright summer morning, when the egrets are preening and stretching their wings in the tall dead trees beside the swamp—bright birds against a dazzling sky—the wet land below the roost trees is full of the newly opened blossoms of wild mallows. Early in the morning the dew is heavy upon them.

The plants are tall and fibrous, three to six feet high. The leaves are alternate and are, as the name indicates, shaped like a halberd or pole-ax; they are roughly triangular. The flowers unfurl broadly in the early sunlight of the summer morning—pale, flesh-colored or pale pink flowers, five petaled, with a dark red blotch down in the bottom of the bell. The stamens are arranged around a central column which terminates in five separate stigmas on which insects often stop. After the pollen from another flower reaches the pistil, the flowers are furled again and turn a deeper pink before they fall. The seeds are hairy and are enclosed in an inflated pod which remains on the bush long into the winter. There in the frozen swamp where the cold winds rattle the raveling stalks of the mallows, the pods shake and the small brown seeds are thrown into the swamp mud. Some are eaten by mice and birds, others are unknowingly picked up on the feet of wading birds and muskrats next spring and are carried to other shores. There, during the growing season, new mallow plants grow to extend their population through the wet places.

The velvety-leaved rose mallow (*Hibiscus lasiocarpus*) has flowers similar to the above but the velvety leaves are heart-shaped. It is found along muddy shores of streams and ponds in the southern third of the state.



LIZARD-TAIL

Saururus cernuus L.

Summer Swamps In the days of long ago there came slow-plodding camels into the noisy marketplaces of Athens, Rome, Alexandria and Damascus, with pungent bags of pepper and other spices from the Orient. These eagerly were bought by the wealthy, the only persons in those days who were able to afford to pay for spices. Pepper itself was a fantastic luxury. A Grecian prince, it is said, gave seven sheep for half a pound of it, and Alaric, King of the Goths, demanded a ransom from Rome which included 3,000 pounds of this condiment. Pepper was a treasure of great price, and its trade is one of the oldest on the earth. Because of it, new sea routes to the land of pepper were discovered, new islands located, new trading companies formed, all because of the pepper vine which grew on certain islands in the East Indies.

The innocent cause of all this excitement and world turmoil is a climbing or trailing shrub called *Piper nigrum*. It has jointed stems and oval, shiny, leathery leaves, from the axils of which spring small tails of tiny white flowers. These develop into drooping clusters of green, berry-like fruits which are the pepper-corns.

In an Illinois swamp there grows the lizard-tail, the only American member of the tribe Saururaceae, to which the pepper vine belongs. The lizard-tail has some of the characteristics of the pepper plant—heart-shaped, leathery leaves, and the long white tails of flowers, tapering like a lizard's tail. This lone member of a tropical family grows abundantly in certain swamps, not as a vine but as a plant two feet tall or so, blossoming in July when the egrets come back to Illinois swamps. Serene in the swamp, lizard-tail has escaped the turmoil which for centuries has surrounded its close kin, the pepper.



SWAMP MILKWEED

Asclepias incarnata L.

Summer Swamps Where the ground is saturated with water along the stream and in the wet pasture, or in the roadside ditch which never dries, there stand the tall stalks of swamp milkweed. In July and August they are topped with spreading clusters of rose-pink and pale pink flowers with a rich, sweet, vanilla-like fragrance to which are attracted innumerable bees, flies, and butterflies. As in the manner of the common milkweed and others of the genus, flying insects pollinate the milkweed flowers, but often are caught by their feet as they attempt to depart.

Swamp milkweed has smaller flowers than many of the clan, but produces them abundantly. Their color and form are among the most exquisite of summer flowers, their fragrance among the most delectable.

The leaves are glossy, veiny, alternate on the tall stem which often grows to six feet tall in a favorable locality. This is the sort of place where woodcocks poke around in spring mud, where redwings nest in nearby willows and cattails, where frogs sing on balmy evenings, where the low trilling of toads fills the warm summer night. Here the bull snake and the water snake come to catch frogs on a summer day. Here on the mud flats when high summer dries much of the water level, the killdeer and sandpipers come peeping and crying in an endless search for insects. This is the haunt of swamp milkweed in Illinois. It is as much a part of it as all the other wild things which live or grow or feed or have their being in the wet places.



AMERICAN LOTUS (Chinquapin. Yonkpin)

Nelumbo lutea (Willd.) Pers.

July - August In midsummer the Illinois River and its adjoining lakes, **Swamps, lakes** as well as many other still waters over much of Illinois, become a land of pale yellow lotuses blossoming, acre upon acre, across the state. Late in spring the rolled-up, red-brown leaves push out of the mud, and as they emerge in the sunlight they become a soft, silvery green. The convoluted, crinkled, twirled up leaf slowly spreads wide in the warm sunlight and becomes a big leaf platter, slightly cupped, with a depression at its center where the stem joins from below. Here almost every summer morning a few drops of night dew roll down the slippery leaf surface and come to rest, mercury-like, in a glistening globe of water.

By the time the leaves have spread to their usual width of a foot or more, a big, egg-shaped bud comes pushing up from the mud, is encased in several layers of corded scales and sepals, and finally stands five feet high or more from its base in the lake. Early one July morning the sepals fall away and the delicate, enormous flower, pale yellow and exotically scented, opens in majesty. The center is made up of a large, flat-topped, peppershaker pistil in the surface of which the seeds form. Around it cluster dozens of lightly poised, dusty yellow stamens. Rows of big oval petals are arranged around the splendid center.

From mid-July until early September, the lotus is the outstanding blossom of Illinois. The great petals fall and the tall stem with its shaker-top of seeds ripens and browns. The leaves even before frost grow tattered and brown, and sink into the water. The seed pods bend over and fall in the water, where the pods disintegrate enough to liberate the large seeds.



QUEEN-OF-THE-PRAIRIE

Filipendula rubra (Hill) Robins

July Queen-of-the-prairie is a rare wild spiraea which blossoms
Swamps in July in certain chosen spots in northern Illinois. It is a plant not of the western prairies but of those extending west of the Alleghenies from Pennsylvania across to Iowa and into Michigan, and down even into Georgia where the true prairie does not exist. The specimen photographed by Mr. Voss was found in Tazewell County near East Peoria.

It grows in a sunny bog where the summer sun beats down and the marsh wrens clatter in the distant sedges. The plant is compact with several broad, deeply lobed and toothed, veiny, bright green leaves, and a slender, woody stem. At the top of the stem is a plume of peach-blossom flowers which are irresistible to passing butterflies and are buzzed around by bees.

These flowers not only are the color of peach blossoms, but are like them in miniature, with a fluff of white stamens standing tall about each flower so that the blossom head presents a delicate and ethereal appearance. Five-petaled, rose-pink, fragrant, the small blossoms of queen-of-the-prairie show their true kinship to the rose family where they properly belong.

The young marsh wrens leave the nests in the sedges. The blackbirds are flocking. Now in the September marsh the queen-of-the-prairie, its leaves a rusty green and drooping a bit, holds a spike of glossy brown seed pods to the warm late sun.



ST. JOHN'S-WORT

Hypericum sphaerocarpum Michx.

Summer

Hillsides, sunny woods

"Saint John His Wort" is the old terminology; the old English name "wort" simply means plant. The *Hypericum* is St. John's

Plant for no particular reason, though many species bloom on St. John's Day, June 24.

The *Hypericums* are flowers of high summer. In the long days and bright sunshine they reach their best growth. Their leafy stems and many-flowered heads are bright along the roads and in the woods where they are a special part of a colorful midsummer flora.

The flowers of St. John's-wort are bright yellow and thin petaled with that same sunshine-glint which the buttercups have. The five petals, however, are thinner and silkier than those of buttercups, and they stand out in a star shape, either slightly cupped or flat, or the petals bend backward while the splendid cluster of bright yellow, curling stamens stands outward to invite flying insects to stop for a while, sip nectar, and fertilize the flower with pollen from another plant.

St. John's-wort has pairs of smooth, untoothed, opposite leaves which are rather thin and somewhat clasping the slightly ribbed stem. The leaves are dryish with a prominent midrib standing out on the underside.

Hypericum sphaerocarpum has larger flowers and a simpler stem than the more bushy *Hypericum perforatum*. The latter has many small flowers which are deep yellow, black-dotted along the fluted margins. The oval, slightly tapered leaves have tiny pale dots scattered upon them.



FROSTWEED

Helianthemum canadense (L.) Michx.

Summer Sunny woods

Flower of the Sun—this is *Helianthemum*, whose Latin name means just that. At the top of the slender woody stem there opens a bright, pale yellow blossom, much like a small yellow single rose. It opens only on a sunny day, and lasts just as long as the sun is in the sky. At sundown the petals drift to the ground and by morning a new bud has reached the point of being ready to open when the sun shines.

Frostweed has a reason, also, for its common name. Late in autumn the stiff brown stem, bereft of leaves and its sun-loving flowers, still stands in the winds whipping out of the north. The nights are chill, and frost forms by morning. The thin, ruddy brown bark near the base of the frostweed's stem is cracked, and crystals of frost protrude and sparkle in the sunshine.

Frostweed is never common but is scattered over many parts of the country in dry gravelly hills and sandy slopes. Here the root probes deeply for moisture. The unbranching simple stem rises stilly into the sunshine, and bears along it pairs of narrow, slightly downy leaves. The frostweeds and rock roses, in the family Cistaceae, are a small group comprising only three genera; *Helianthemum*, *Hudsonia*, and *Lechea*. The latter two are small upright plants with tiny flowers; all three choose sandy places in which to thrust their roots and spread their leaves and flowers.



FIELD BINDWEED (Wild Morning Glory)

Convolvulus arvensis L.

Summer Around the dingiest tenements, bordering the forbidding
Waste places fences around grimy factories, in the black, cindery ballast
 of railroad embankments and railroad yards, the field
 bindweed produces bright white trumpets all summer long. It may be
 called a weed, an introduced weed which came over from Europe some
 time ago, but it is nevertheless one of the few, if not the only, flowers
 to grow undisturbed in the most impossible conditions of cities. It seems
 to thrive in a sooty atmosphere where even the summer sun shines
 through a haze of dirty air, where coal smoke blackens the Monday wash
 before it is dry, where locomotives spew forth a cindery breath, or the
 smokestacks of factories belch black grime. Perhaps this is because fresh
 flowers open every morning, and the old flowers of the day before, their
 brief work done, are forming seeds in their fertilized ovaries. There along
 the sidewalk, the wire fence, the ballast, the bindweed plants cover every
 inch permitted it, and even climb up the wire mesh of the factory fence
 or caress the creosoted railroad ties or entwine the telephone pole's
 guy wires.

This *Convolvulus*, like the other morning glories, is of tropical
 origin, where the first morning glories may have known the humid
 moisture and warmth of jungles and climbed high and wide into the
 forest trees. The morning glories we have today may have been left in
 the north when a warmer climate departed with the approach of the
 continental ice mass. At any rate, the bindweeds, both native and intro-
 duced, are generous with their flowers and lavish with their vines and
 leaves.



MAN-OF-THE-EARTH (Macoupin)

Ipomoea pandurata (L.) Mey.

Summer Bottomlands

There was a good deal to eat in the land of the Illiniwek —if you knew where to look for it. There were cattail and calamus roots, and cakes to be made of cattail pollen or acorn meal or panic grass seeds. There were lotus pods and lotus roots, as well as the beans and corn and squash which the ancestors of the Illiniwek had brought from their ancient homelands in the south. And there was always the macoupin, or man-of-the-earth, if you knew where to find it.

Man-of-the-earth, or man-root, is a member of the Bindweed family. The root is huge and deeply hidden in the earth, but there is so much food in it that the effort in digging it out is worthwhile. Said Father Allouez, back in the late seventeenth century: "The Illiniwek gathered 'macopin', a long tuberous swamp root which must be leached before eating. These macopins serve as provision for most of the savages. The roots are as large as an arm, others a little smaller. The savages make a hole in the earth where they put a bed of rock reddened in the fire, then one of leaves, one of macopin, one of reddend rocks, and so on up to the top which they cover with earth and leave their roots inside to sweat for two or three days. After this they boil them and eat them alone or with oil."

The man-of-the-earth or macoupin (from which the name Macoupin County was obtained) still grows in Illinois. Roots weighing 29 pounds or more still are found. The flowers of man-of-the-earth vine are luminous white trumpets with a purple throat which open broadly in the summer sunshine. The leaves are fiddle-shaped or heart-shaped, arranged on a long, straggling vine.



DODDER

Cuscuta species

**Summer
Bottomlands**

Dodder is one of the strange parasitic plants which are part of the Illinois flora. Dodder starts out as a plant with roots in the soil, where the small seeds have germinated, but as the thready yellow, orange, or red stems reach up and twine around a nearby plant, the roots shrivel and the plant loses all contact with the soil. The dodder derives nourishment from the juices of the host plant, which the parasite obtains by means of suckers attached to the plant at numerous points of contact. The ultimate fate of the host plant usually is death, but it usually lasts long enough for the dodder to nourish itself throughout the summer and blossom out in quantities of tiny yellow orange flowers produced in masses along the thready stems.

It is a strange plant, the dodder. It belongs to the Bindweed family, along with the morning glories and bindweeds, all of which have proper leaves and roots set in the ground. But something happens to the dodder after it starts to grow and it never has any leaves or green coloring matter to assist in the manufacture of its own food. All it needs, therefore, are the tightly twining stems which grow by dozens like eager worms around all the plants in the immediate vicinity until the dodder plants make a bright orange mat against the greenery of the summer. Dodder makes seeds, as other plants do, and these fall to the ground to germinate.



TRUMPET-VINE (Trumpet-Creeper)

Campsis radicans (L.) Seem.

Summer
Bottomland woods.
sands, roadsides

The river forest is dark and sometimes eerie and brooding in the half light which finds its way through the dense leafy canopy held high above the ground. The ground is covered in summer with a low jungle of stinging nettles and jewel-weed with a scattering of other plants which grow in the hard, caked ground. The trees are mostly tall—the giant white-armed sycamores, the elegant elms, the broad and leafy silver maples; these are the tall trees of the bottomlands. Sometimes there are pecan trees along the Illinois and the Mississippi. Below them as a middle strata are papaw trees, wahoos, bladdernuts, redbuds, spicebush.

And from the tall trunks of the trees there hang the tremendous festoons of trumpet-vine, illuminator of darkness.

The vine starts up from a deep, woody root and sends up at first weak green vines. In the passing of years, however, the stem becomes woody and trunk-like, from which each year's new growth springs, grows woody, and matures. The stem twines firmly around trees and hangs great green draperies of compound leaves. Among them shine the bright red-orange trumpet flowers which are visited by hummingbirds all summer long. The seeds form in large bean-like pods which in winter split lengthwise and let the flat, paper-winged seeds flutter into the woods.

There are several manners of growth among the trumpet-vines, only one species of which is recognized for Illinois. Some may grow to great heights in forest trees. Others never climb but sprawl over undergrowth and do not put out much length of vine. In open lowlands, along fences, in open situations, the vine is more woody and forms a bush.



FRINGED LOOSESTRIFE

Lysimachia ciliata L.

July

River woods

Like yellow primroses, in whose family they actually are, the fringed loosestrife flowers open in midsummer when hot sun and dry wind might wither more delicate flowers.

But fringed loosestrife, in the river-bottom woods and along railroad tracks where the ditches are damp, blossoms in July and seems well able to survive the summer.

The plant is tall, often three feet high or more, with pairs of opposite, yellow-green, tapering leaves all along the branching stalk. Along the upper half of the stem there are flower stalks and branches which spring from the axils of the leaves, with slender, curving stems bearing oval, tapering buds. These open as five-petaled, pale yellow flowers with a pale red blotch at the base of each petal. There are five curving, stiff stamens and the pistil, and five recurved, sharp-pointed sepals cupping the flower.

Although fringed loosestrife has a tall, lank plant, the flowers nevertheless have some of the quality of spring blossoms. The upper part of the plant is a spring-flowering plant; the lower half is more like a summer weed. Perennials, they grow in the heavy rich ground of the river bottoms where they bloom abundantly during most of July.



STARRY CAMPION

Silene stellata (L.) Ait.

Summer Woods Most summer flowers are stout and sturdy and the flowers themselves are able to withstand much sunshine and heat without withering. But the starry campion, flower of mid-summer woods, is as delicate as a spring blossom. It wilts almost at once when it is picked or when the heat is intense even in the shady woods, and dangles its lacy bells briefly before they fall.

The starry campion's flower when it is spread widely shows five petals which are deeply lacinate or cut almost the length of each petal. It appears almost to be a group of white tatters of lace held together by the pale, green-white calyx. It is one of the few really delicate and fragile summer wild flowers in the Illinois woods.

The flowers are arranged in pairs and clusters along the tall, pale stem. The leaves are stemless, tapering, grey-green, and slightly downy, arranged in whorls of four along the stem. This pattern is a good indication of the plant's identity even when it is not in bloom.

Starry campion is part of that plant and animal community which is found in the mixed oak woods in the summer. Under the shade of the leafy canopy there are few flowers—the campion, the skullcap, the American bellflower, the tick trefoil, and the tangle of bedstraw matted on the ground. Here the wood pewee on a high dead twig cries plaintively all day long, and the red-eyed vireo endlessly explores the treetops and sings a monotonous song. Beneath the campions, the chipmunks scurry about on their minutely important errands, and a beetle, glistening with iridescent blue and black, climbs a campion stalk and then takes wing through the summer woods.



ROUGH PENNYROYAL

Hedeoma hispida Pursh

June Woods Small, aromatic, low, the pennyroyal may be walked upon without anyone noticing that it is there, until the sweet aroma of the crushed leaves and stems fills the summer air. Pennyroyal is one of the most fragrant of the mints, with none of the acrid quality of some of the pungent or bitter members of the family. Pennyroyal tea, brewed from the dried and crumbled leaves, contains the essence of that flavor of the dry summer hills.

Pennyroyal is part of the mid-summer flora of the dry oak woods floor, there on the hilly places where the soil is caked and cracked during the periods of no rain and much heat. These are the woods where the wood pewee wails thinly all day long, from three o'clock in the morning until nine o'clock at night; woods known by the fox squirrel and the big velvety cecropia moths. Woods like these may be full of early bloom, but in mid-summer there is almost nothing in bloom, and the sparse vegetation is dry and almost without life. Somehow the pennyroyal manages to bloom and live until, in late summer and early autumn, the little low plants finally grow dry and sere. It is now that their aromatic perfume is strongest in the warm days of September. Even under snow, and at the ragged end of winter, the remaining little thin stems and remnants of leaves continue to hold that unmistakable odor.

Two species of pennyroyal are found in Illinois. The American pennyroyal (*Hedeoma pulegioides*) is most abundant throughout woods, is most aromatic and is taller than other pennyroyals. The leaves are elliptical and petioled. Rough pennyroyal (*Hedeoma hispida*) has sessile, linear leaves, is very hispid, and is limited to sandy soils.



HEART-LEAVED SKULLCAP

Scutellaria ovata Hill.

June - July Woods

In the oak woods where shade is deep in summer, there come two purple flowers, the tall bellflower and the skullcap. They do not seem to need much sun in which to grow tall and blossom abundantly all through the hot, steamy days of late summer. There in the Illinois oak woods where the mosquitoes are violent and the wood thrush nests on an overhanging bough, the intricate flowers of skullcap start to bloom at the base of the bud stalk and work their way to the top.

Skullcap is one of the mints but it has no aromatic odor. It does, however, have the characteristic squarish stem and opposite leaves, and is downy, the leaves veiny and scallop-toothed. The flower stalks spring from the top of the stem and bear many purple buds which elongate and burst open as tubular, bright purple and white flowers with drooping lips.

The calyx which enfolds the base of the tube and contains the ovary undergoes a certain change when the flower has finished blooming, and it is this change which gave the name of *Scutellaria* to the skullcap—*scutella*, meaning "little dish". For the seeds form in the transformed calyx which is like a tiny dish with a lid, or a tight little box holding the developing seeds. When these are ripe and the pod is dry, it splits its lid around where it is fastened and the seeds fall out on the wind.

Several other skullcaps are found in Illinois. Mad-dog skullcap (*Scutellaria lateriflora*) with its thin racemes of small blue flowers is found in swamps and wet places. Small skullcap (*Scutellaria parvula*) is found in moist, cool places in woods with a northward slope.



PURPLE CONEFLOWER

Brauneria purpurea (L.) Britt.

June - August
Prairie roadsides

It is a startlingly different sort of color, that purple-pink of the purple coneflower blossoming in a damp ditch beside the road or below the ballast of a railroad embankment. The plant is a stately one and is often used in gardens; particularly the purple coneflower is often sold by plant nurseries. This plant is stiff with alternate, rough, tapering leaves on a hairy, rough stem topped with a single large flower. The rays curl somewhat or droop below the rounded, conical center. This at first is purple, but when the orange stamens come out, the color contrast between the purple, the orange, and the purple-pink rays is not always too pleasing to the eye. Out along the railroad tracks or on the broad sweep of sunny prairie, it is part of a landscape which often puts orange butterfly weed and pink phlox together without too obvious clashing.

Of these two coneflowers, the purple is considered the more beautiful. Pale coneflower (*Brauneria pallida*) has paler rays which droop as if they felt the hand of blight or wilt upon them. The round, stiff, bristly cone stands erect; the thin, narrow rays hang low in the bright sunshine. The plant is smaller than the preceding, has long, narrow, rough leaves both basal and alternate on the stem, and, like the other, is a plant which is typical of ditches and roadsides of the wet prairie. Both bloom from late June through July and occasionally well into August.



INDIAN PIPE

Monotropa uniflora L.

August - September Woods A creation in white wax set among the ferns and mosses, the Indian pipe on a late summer day

puts a special quality of excitement in the woods. Devoid of all color, the strange, brittle-looking pipes stand motionless and unreal. It is as if they are spectres from another world, ghost plants of the forest. No other colorless plants seem to possess exactly the atmosphere of mystery as Indian pipe does in its chosen and unexpected spot. The Indians said that wherever the Indian pipe sprang up, an Indian once paused to shake out the white ashes from his pipe.

Indian pipe is a saprophyte, not a parasite as are the cancer root and squawroot. It lives on dead material in the ground, usually dead wood buried in the rich, soft humus of deep woods. From this there rise the curled-over white stalks with their pipe-like blossoms. These are composed of many white, overlapping scales surrounding a chaste, vase-shaped pistil and dark stamens. The stems are pure white with a few alternate white scales upon them instead of leaves. Indian pipe has no true leaves and no particle of greenness. Occasionally there is a hint of pale pink or red in flower or stem, but usually it is that stark, ice-white which, as the plant ages, slowly blackens. At first only the scales and parts of the flower are tipped with accents of ebony. Then slowly the ripening flower stands erect and the whole plant turns black. It stands there drying, the brown seed pod remaining in the original vase shape of the pistil, stands all through the autumn and winter, and lasts well into the coming spring.



AMERICAN BELLFLOWER

Campanula americana L.

**July - September
Woods**

Tall among the summer trees, the spires of lavender-blue bellflowers relieve the Illinois woods of a degree of weediness and overgrowth into which by midsummer they seem to have plunged. There are nettles and tangles of bittersweet, bushy plants of tick trefoil, tall Joe-pye weeds and many more which transform the once neat spring woods into a jungle by midsummer. Now the slim, somewhat angular stems of American bellflower grow tall, yet never seem weedy. They may be two to six feet high, the stems set with alternate, tapered, thin, dark green leaves and milky juice. A tall spike bears blue, flat bells marked with white lines, white center, and out-curving lavender styles and white stamens.

It is a biennial. The seeds which fall in late summer start to grow immediately, so that by frost there are small plants which look a good deal like blue violet plants. Other seeds remain and germinate in the spring. These plants remain low all the following year, but the next spring they begin to send up their tall stems and leaves which appear entirely different in shape from those of the first year plants. The plant blossoms abundantly and forms more buds, branches out at the axils of the leaves and often continues to bloom until heavy frost. Then the plant is dead. Its seeds have been scattered and will provide for coming blossoms.

At least two other *Campanulas* or bellflowers are native in Illinois. On sandy ledges in northern Illinois, especially at Starved Rock State Park and rarely elsewhere, the slender, wiry stems of the harebell (*Campanula intercedens*) dangle their purplish-blue bells in the canyon winds. In marshes and wet places grows the marsh bellflower (*Campanula aparinoides*). The small bell-shaped flowers are white or very pale blue-white.



MULLEIN FOXGLOVE

Dasistoma macrophylla (Nutt.) Raf.

Summer

River woods

Above the river the woods in summer are dense and shaded. Mosquitoes sing their hunting songs. Redstarts with their flash of flame and black and fan tails chatter all day in the maples. The prothonotary warbler is nesting in a hole in a willow. And on the slope well above the annual high-water mark, above the place where the hurrah's nests of old cornstalks and debris are caught in the bushes, the tall plants of mullein foxglove bloom.

The deep shade of the river woods is one of the requirements of mullein foxglove; it is seldom found away from this particular haunt; it is part of the river-bank country in July and August. There it opens its bright yellow flowers and makes its seeds over a period of many weeks.

It is a pyramidal plant. It is very leafy, with the branches and leafage broadest and most dense below and tapering to the summit of the stalk which often is five feet tall. The lower leaves are lobed, the upper narrow and simple, the branches set with yellow buds. Only a few of the small glossy, butter-yellow flowers, however, open at one time, so that the blooming period is considerably extended through the summer.

The throat of the flower is thickly furred with hairs and wool which prevent entry of most insects. The tube of the flower is short, the five spreading corolla parts broad and blunt. The flower is very much smaller and not so bright a yellow as in the yellow false foxglove. Both, however, are members of the diverse and highly specialized Figwort family, to which also belong the snapdragons, veronicas, foxgloves, Paulownia, penstemons, mulleins, and Indian paint brush.



YELLOW FALSE FOXGLOVE

Aureolaria grandiflora (Benth.) Pennell

Woods

July - August

The yellow false foxglove is a splendid addition to the summer woodland flora of Illinois.

On the hogback ridge where the black oaks and ironwoods grow in heavy clay soil, the graceful plants of the yellow false foxglove stand tall in the splashy sun and shadow of the ridge woods. The foxglove plant has many willowy stems three feet tall or more, abundantly leafy with leaves deeply toothed, somewhat folded, grey-green; in the axils of the leaves are the bright buttercup-yellow buds. At first they are round. Then they elongate and open as a large tubular blossom often two to three inches long, with a broad, open face of five petal divisions and a deep, shining, golden throat. The flower glistens much as a buttercup or a marsh marigold does, and is almost like a garden flower misplaced there in the oak country or dry clay soil of the hogback. But the yellow false foxglove could not live in the garden. This plant is a semi-parasite on the roots of oak trees, and such parasites are firmly anchored to their chosen host in their chosen haunt and cannot be moved. Unlike many true parasites, the false foxglove has green leaves which manufacture most of their own food. The roots are fastened to the roots of the host, from which some food and moisture are obtained.

In August and September the yellow false foxglove opens its dramatically beautiful flowers; they turn brown and drop away, and more buds open during a period of several weeks. The interesting, blackened stalks of seed pods remain all winter.



GREAT BLUE LOBELIA

Lobelia siphilitica L.

July - September In the early autumn the roadside ditches and wood-
Ditches, streams land stream-sides often show spikes of a bright blue
 flower—a deep, almost ultramarine blue marked with
 white on the three-parted lip. This is the great blue lobelia.

Autumn somehow is the fitting time for blue flowers such as these. Now the sky becomes a deeper blue. There is a haze on the hills; there are flocks of bluebirds flying. The lobelia is another expression of that magnificent autumnal color.

Although the blossom is well suited to garden use, where truly blue flowers are scarce and in demand, the wild blue lobelia seldom is used in American gardens. But as early as 1665, seeds of this plant, together with other American rarities which were new to English eyes, were sent from the colony of Virginia to be grown in England. Here the flower was highly prized and many hybrids were produced from it. Across the world from its native land, the lobelia became a favorite garden flower.

But lobelias have been known still longer as medicinal plants. They contain in their juices a poison whose effect is somewhat like that of nicotine when taken internally in large doses. It affects the respiratory system, the heart, and the blood pressure. Nevertheless, the lobelia's poison when administered in proper doses as a medicine is used to relieve asthma, bronchitis, and certain respiratory diseases.

Cardinal flower (*Lobelia cardinalis*), a bright scarlet lobelia, is a native of swamps and wet places, of the edges of drainage ditches which it margins with spikes of dazzling color, or of wet meadows where it grows with drifts of white and blue *Eupatorium*, marsh grasses, and goldenrods.



JOE-PYE WEED

Eupatorium purpureum L.

**July - September
Woods**

Tall and regal stand the Joe-pye weeds in the August woods. The bellflower is in bloom; so is skullcap. It is hot and sticky and quiet in the woods, quiet except for the incessant buzzing of insects. Birds sing little now except for the endless songs of the vireos and the clattering of woodpeckers in the old trees. Butterflies and bees in the woods come now to the great plumes of the Joe-pye weeds whose scent is part of the midsummer atmosphere.

Joe-pye weed is one of the Composites, one of the Eupatoriums which claim the white snakeroot, the boneset, the thoroughwort, and the blue mist flower as members of the family. Of them all, a sturdy tribe, Joe-pye weed is the largest and most imposing in growth and blossoming. Although it is so tall, it somehow escapes weediness by having uniform and geometrically placed whorls of leaves in groups of four or five around the slightly downy stems. The stem is erect and does not branch. The summit of the stalk has a large and much branched head of small fuzzy flowers with long stamens and pistils thrust high above the short rays. The flower heads are fragrant and are a source of late summer nectar to foraging bees.

In the northern swamps and bogs, a shorter and stouter, more brightly colored Joe-pye weed blooms in August. The stems and flowers are lavender-magenta, often very bright with that purple-rose color which is so common among many species of flowers in the north.



WHITE SNAKEROOT

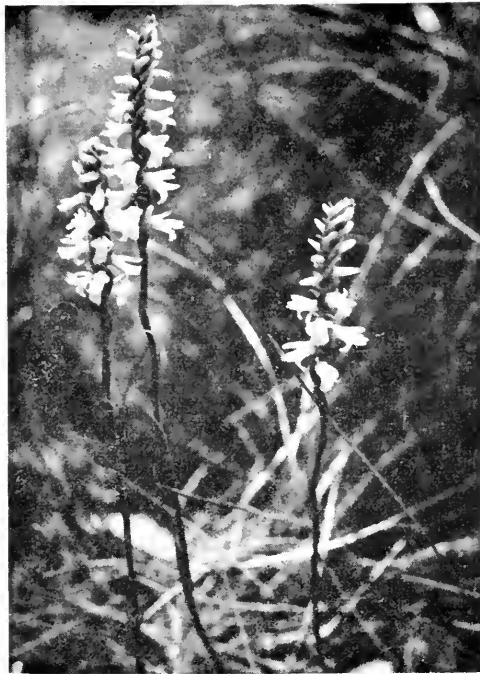
Eupatorium rugosum Houtt.

August - September
Dry woods

Nancy Lincoln lay ill in the earth-floored cabin in Kentucky, and no one knew what to do about it. The lean cow out in the woods pasture stood about listlessly and trembled in spasms of shivering that shook her bony frame. Nancy Lincoln died and doubtless the cow did, too, and in the dry September woods the white snakeroot's lusty greenery continued to grow in abundance.

Not until comparatively recently was it discovered that the scourge of pioneer days, the dreaded milk sickness, and "trembles" in cows, was caused by white snakeroot poison. The plant contains a violent toxic poison which affects cows which eat it. Human beings who drink the milk of these cows are infected with milk sickness which even now often results in death. Cows in woods pastures, where herbage by late summer is dry and sparse, are forced to eat the green leaves of snakeroot.

There are many *Eupatoriums*, some of which are difficult to identify, others of which are simple. Boneset (*Eupatorium perfoliatum*) is a stout, very hairy plant of the sunny uplands. The pairs of rough, hairy, toothed leaves clasp the stem or are entirely perfoliate (with the stem piercing the joining leaves). The flowers are fuzzy, grey-white, and are held in broad heads at the top of the plant. Late Boneset (*Eupatorium serotinum*) is smooth and grey-green, with pairs of narrow, deeply toothed, grey-green leaves. The flowers are grey-white in clusters at the tops of the stems. Blue mist-flower, often called ageratum, (*Eupatorium coelestinum*) grows in woods. It is one to two feet tall, smooth, with small, veiny green leaves, and heads of fuzzy lavender-blue or sky-blue flowers which are often used in gardens.



LADIES' TRESSES

Spiranthes cernua (L.) Richard

September
Dry woods,
sunny banks

The rich vanilla-fragrance of ladies' tresses along the autumn trail is a startling and most pleasant experience. There where the trail through the mixed hardwoods comes out into the broad sunshine, where the goldenrod and asters blossom abundantly, there are low, ivory-white orchids in full bloom. It is mid-September, and the latest orchid of the year, and one of the most fragrant of all wild orchids, is in blossom.

Ladies' tresses grow in rather unexpected places. Rather, in autumn one has forgotten about looking for orchids: besides, most wild orchids grow in deep woodlands or in bogs. It seems odd to find wild orchids growing so well in the dry clay soil along the foot-trail toward the upland. The soil is hard, the sun is bright, and the dry *Aristida* grasses send their three-pronged seed-awns into the socks of the passing hiker. Yet here are delicate little white orchids, the ladies' tresses.

Spiranthes is a spike orchid. In spring the dark green, narrow, blunt leaves come up along the trail and stay green most of the summer. By August, however, they have disappeared, and a month later the tight stalks with the braided white buds grow into the September sunshine. The flowers begin to bloom from the bottom of the spike and are in blossom for several weeks until the last pointed white bud at the tip of the stem is out of bloom. The flowers are curved with frilled lower lip and white parts arched on either side of the tube. And the fragrance fills the air. It comes to meet the hiker long before he has reached the spot where the ladies' tresses bloom. It rises like something tangible into the sunshine, and arbutus-like, pervades the area where September orchids bloom.



TICKSEED SUNFLOWER (Beggarticks)

Bidens aristosa (Michx.) Britt.

August - September
Fields, ditches

Now in September there comes over the countryside that true autumn glory which reaches a climax of color in the massing of yellow everywhere. September is the yellow time; now the tickseed sunflowers bloom. There are millions of these glistening orange-yellow daisy flowers in all the low damp places. They follow the contours of the landscape and grow in all the open sunny lowlands—down the meandering length of a drainage wash in a field, along the roadside ditches, across whole deserted fields, especially in southern Illinois in the oil fields. There is in the tickseed sunflower little of the aspect of weediness so often associated with the late summer and autumn flowers. These plants are all low, seldom more than two feet tall, slender, smooth, with finely compound thin, glossy leaves, and many branching stalks bearing those cupped, dazzling yellow flowers. They are open in sunshiny weather, closed and drooped in rain or at night. To Illinois they give something of the same splash of golden color over the landscape which is provided by California poppies on the hillsides of the west.

The tickseed sunflower is not a true sunflower, but is in the genus *Bidens*, the bur-marigolds, beggar-ticks, and Spanish needles. They are noted for their two to four barbed awns on the seeds which stick to a passerby and travel along on his clothing. Some are exceedingly sharp and unpleasant, others not so persistent. Only a few of the *Bidens* have flowers of any beauty; most of them are so highly efficient as seed producers that they have no ray flowers, but concentrate flower energy upon the center—the flower is all center—where the massed seeds are developed.



COMMON SUNFLOWER

Helianthus annuus L.

Summer The sunflower, said the ancient Greeks, is Clyte, a sea nymph
Roadsides who fell in love with the sun, was changed into a sunflower,
and forever follows the daily movements of the sun across
the sky. The American sunflower, a tall and splendid native plant, does
as the Greek sunflower did thousands of years ago, and usually keeps
its face turned toward the sun as it moves over the sky.

The annual sunflower, largest and most useful of its tribe, originally
was native west of the Mississippi; much later it was made the state
flower of Kansas. But more than four hundred years ago, the western
Indian who moved across the Mississippi took sunflower seeds with them.
Gradually, through the centuries, the sunflower was planted or escaped
from Indian plantings, until it had reached Lake Huron, where Samuel
de Champlain found it when he came to the American wilderness around
the Great Lakes. He found that the Indians made a textile fiber from
the stems, the leaves were used for horse fodder, the seeds for food and
for oil, and from the flowers a yellow dye was made. The sunflower
for many years has been one of the most useful of the plants known
to the Indians and remains useful in today's economy.

In their flower heads, the sunflowers possess a tremendously complicated
seed-producing mechanism. The so-called petals are yellow rays.
The sticky brown, resinous, scented center or disk is composed of hun-
dreds, sometimes thousands, of complete flowers which produce yellow
pollen and erect pistils which eventually fall away and reveal a bending
head of ripe, fat-filled, vitamin-rich sunflower seeds, food for Indian,
cardinal, or barnyard fowl.



HAIRY SUNFLOWER

Helianthus mollis Lam.

Late Summer Roadsides

Twenty-five sunflowers and many subspecies are listed in *Gray's Manual of Botany*, 1950 edition, and of these many are found in Illinois; most of them bloom in

September.

Hairy sunflower (*Helianthus mollis*) is compact, seldom more than two to three feet tall, has pairs of small, thick, hairy, heart-shaped leaves clasping the hairy or downy stem. Usually one showy sunflower with brown center stands regally at the top of the stalk. A neat, ornamental plant, it is found along sandy prairie roadsides and at the edges of woods.

Woodland sunflower (*Helianthus divaricatus*) grows in dry woods and blooms in July, earlier than the majority of sunflowers, and sometimes is the first of its kind to come into bloom. The three to six foot stem is slender, stiff, and fine-hairy, with pairs of opposite leaves arranged rather far apart upon it. One to three flowers are borne on short stalks above the last pair of leaves and are three inches broad with golden-brown center.

Giant sunflower (*Helianthus grosseserratus*) is truly the giant of them all. The plants often reach a height of eight to twelve feet and are much branched above with abundant flower stems. The leaves are large, jaggedly toothed, in drooping pairs on the rough stem. The upper part of the stem with its numerous branches bears great clusters of bright yellow sunflowers with golden-brown centers. The flowers possess that compelling beauty of the sunflower, and are fragrant with a rich odor reminiscent of chocolate. The giant sunflower is a common border plant along country roads, bottomland roads, and ditches in August and September. This is the climax of the year's color: this is the Time of Yellow Flowers.



PRAIRIE CONEFLOWER

Ratibida pinnata (Vent.) Barnh.

July - August
Prairie roadsides

Along certain highways and the railroad right-of-way in Illinois, there are plants which are remnants of the old prairie, most of which has been plowed and its flora changed. Usually in plowed prairie soil other plants spring up; the old species die out and frequently the plants taking their place are escaped cultivated plants or immigrants from Europe or Asia. Only in a comparatively few places in Illinois are there plants typical of the ancient prairie habitat. These stand out as distinctively as if they were foreign rarities consigned to a roadside. Instead, they are the original inhabitants.

Very late in the history of the Ice Age, the Pleistocene, there was much flooded, soggy land as a result of melt-water from receding glaciers. Through the procession of plant succession which took place over many years, the broad lakes filled with plants, and when the long drouth and searing winds came late in post-glacial times, miles of prairie formed in Illinois. Plants which never had grown in Illinois before, during all its forested interglacial times and more rigorous glacial periods, now moved in from western plains. Among these very likely were the columnar and the prairie coneflowers.

Far more common, inhabitant of most prairie roadsides in Illinois, is the grey-headed or prairie coneflower. It is a ragged-looking plant with grey-green compound leaves and flowers distinguished by their hard grey cones and drooping pale yellow rays. It blooms in late July and August. Like its rare relation, the columnar coneflower (*Ratibida columnifera*), it has, somehow and forever, the look of ancient prairie country in its blossoming.



BLAZING STAR GAYFEATHER

Liatris pycnostachya Michx.

July - August
Prairie roadsides

They are plants of the open prairie—these members of a dramatic and magnificent family, the *Liatris*. In manner of growth and in color and size, the *Liatris* clan is unique in the world of bright prairie flowers.

Gayfeather is a Composite, closely related to the bonesets and thoroughworts, which thrives in the blazing sunshine and dry soil of open country along railroads and highways, and on open, dry clay ridges. Here in August stand up the exclamation marks of the gayfeather, which is one of the most splendid plants to be found on the Illinois prairie. It grows in a long, unbranching wand which often stands four or five feet tall. Perhaps two-thirds of its resilient stalk is closely set with spirals of short, narrow leaves. The remainder of the stem is a thickly set club of bright, rose-purple, starry blossoms. When they are in bloom, they present a "cattail" of rose-purple flowers which are fuzzy with the extended white stamens and pistils. For a time the entire stalk is in bloom at once; then the lower flowers begin to fade as the upper buds continue to blossom.

There are at least six species of gayfeather and blazing star in Illinois. All are very similar in habit and color, and most have a wide range from north to south through the state. They are most frequently found with the drifts of early goldenrod and tick trefoil, with ironweed and prairie sunflowers, there where the grey spermophile has its burrow and the nest of the yellowthroat down in the drying grass is empty now of eggs and young.



HILL'S THISTLE

Cirsium hillii (Canby) Fern.

Summer
Roadsides, prairies

Grotesque and somewhat over-elaborate as a flower, Hill's thistle in June sets its large flowers above ten-to-twenty-inch stalks on the sunshiny prairie.

The plant is low and stout and finely downy, as well as extremely prickly on the twisted and deeply cut and spiny leaves. It always appears as if this thistle plant were buried in the ground with only the last half foot or so thrusting through the tough prairie sod. But this is a characteristic of the Hill's thistle and the closely related bull thistle.

The flower of Hill's thistle is a large, globular head of bright rose-purple or pink, or rarely white, florets bursting from the prickly, orderly receptacle with its individual fine prickles standing out at intervals. The flower is a composite mass of long purple florets from which thrust the powdery, cream-white stamens and the long, thin pistils. When the thistle is fertilized, usually by butterflies, the flower becomes a mass of downy fluff, at the base of which are the seeds. When goldfinches come to eat the seeds and use the silk for nest-building purposes, the released silks often float away on the wind.

The low, compact Hill's thistle is found on open prairie land along the highways and occasionally in prairie pasture land. The very large flowers are instantly noticed even by passing motorists, and by botanists seeking typical plants of the Illinois prairie.

The common bull thistle (*Cirsium vulgare*) is a biennial plant, three to five feet tall, which has come to us from Europe and has become established in pastures and old fields throughout the state. Its leaves are green on both sides, which serves to distinguish it from the field thistle, which has leaves white beneath.



FIELD THISTLE

Cirsium discolor (Muhl.) Spreng.

Late Summer - Autumn
Fields, roadsides

Now thistles bloom. Their pink-purple flowers are an emblem of the greatness of growth and the strength of life in early autumn. They are part of a landscape which includes the first scarlet buckeye leaf at the edge of the woods, part of the dark green depth of the oak leaves, part of that stamina characteristic of summer plants which grow in hot sunshine and dry soil. They must be strong to withstand a beating sun and a degree of hot humidity which is part of summer in the Mississippi valley.

Around the pasture pond the thistle blossoms attract bumblebees which come buzzing in basso to visit the white, pollen-tipped stamens and probe deeply into the nectaries of thistle honey. The thistle butterfly (*Vanessa cardui*) perhaps laid eggs upon these spiny leaves. Upon them now the caterpillars feed, form chrysalids, emerge as brown and golden-patterned butterflies which sip the thistle nectar.

Goldfinches in bounding black and yellow flight dart singing into the thistles. Already the earlier blooms have formed fluff-topped seeds, and these the goldfinches eat. They neatly snip off the meaty seeds and allow the silks to go floating off across the countryside. Perhaps in the thistles, too, there is a goldfinch nest lined with thistle down. Within the thorny fortress the goldfinch nest was safe.

This is the thistle and its late summer-early autumn environment, its part in the end of the growing season and the approach of winter. The insects and birds, the sunshine and wind and rain, which are part of the thistle's existence, also are part of that complex life which is in Illinois and the flowers which upholster it with color.



ROSIN WEED (Compass Plant)

Silphium laciniatum L.

July - September A giant on the prairies, the rosin weed grows in the blazing hot sunshine of the Illinois summer. It is part of that picture which remains to tell of the old prairie when plants like this one grew for miles and their resinous odor filled the late summer air.

Rosin weed is one of the giant *Silphiums* which still are guide-posts to prairie conditions. Like the finger-posts of *Spartina* grass and Sullivant's milkweed, the *Silphiums*, in particular the rosin weed and prairie dock, indicate the presence of that dense black soil, unplowed and undisturbed since the days when the prairie itself was unplowed and undisturbed.

The rosin weed grows tall. It is seldom less than five feet tall and often reaches twice that height. Its stout, densely hairy stem is tough and resinous; globules of white resin ooze out and are sticky along the stalk. The upper half of the stalk contains bright yellow sunflowers, two to three inches broad with a calyx of overlapping hairy, resinous bracts, the flowers set alternately and spirally around the stem. There may be a dozen or two flowers all in bloom at once. Below them are the remarkable leaves. They are thick, resinous, tough, so deeply lobed that they almost appear compound. On the wide, open prairies the leaves of this plant are often disposed so that they present their edges to north and south, hence the name of compass plant by which it is commonly called.



PRAIRIE DOCK

Silphium terebinthinaceum Jacq.

July - August

Prairie roadsides

As distinctive as the tremendous wands of flowers which mark the presence of rosin weed are the tall stalks of the prairie dock which rise above great spade-shaped leaves. The leaves themselves are individuals; there is nothing else like them in prairie, swamp, or forest.

Prairie dock leaves come up in spring and stand without flower stalks or further growth until August. The leaves are a foot or more long, on stalks of shorter length, and are thick, resinous, spade-shaped, and coarsely toothed. These leaves, like those of other *Silphiums* and plants which, like these, live in hot, open sunshine and wind, are coated with a rough waxy layer and are constructed in such a manner that moisture is not easily evaporated from them. In the hottest weather the leaves do not wilt. They are erect above the ground and thus present only their thin edges to the sun, not the broad faces of the leaves as the water lilies and lotuses do.

In August, from among the clusters of leaves, there spring tall, smooth stalks, at the top of which are less than a dozen smooth round buds. These open as small sunflowers, very much like those of rosin weed, but smaller and more delicate. High above the large leaves, these graceful stalks seem to have no connection with the leaves or roots. Up in the sunshine and against the prairie sky, the flowers of prairie dock wave in the wind, bloom and go. The resin in the leaves and stems has an odor suggestive of turpentine, hence the Latin name "*terebinthinaceum*".



CANADA GOLDENROD (Tall Goldenrod)

Solidago altissima L.

Late Summer

Ditches, low places

A very important part of the seasonal atmosphere would be lost if there were no goldenrods in bloom from late July until October . . . if there were none of those golden plumes bending as one in the summer wind . . . if there were no great flower-gardens of goldenrod along the swamps and in ditches and on hills. It would be as empty a season without goldenrod as springtime would be empty without violets. Each is indicative of the time of year and of the mood of the season, as inexorable and as irreplaceable as the going and coming of the migrant birds, or the passage of Time itself across the calendar.

Goldenrod in Illinois numbers dozens of species. Many are difficult to identify because their characteristics are so similar. But certain species stand out regally as individuals and may be identified as species, not just grouped in the great family of goldenrods.

One of these is the Canada goldenrod, with its long wands of stems topped with a broad mass of flowers. The leaves are sessile, grey-green, slightly toothed, abundant up the length of the stem. This tall goldenrod grows in moist places near swamps and in prairie roadside ditches.

The flowers of goldenrod unite in a tremendous working colony of blossoms, each of which is complete in itself. The center of each tiny yellow flower contains the tube flowers which produce the fluff-tipped seeds. Around the tubular blossoms are the thin yellow rays. The goldenrod flower-head contains hundreds of miniature sunflowers.

This goldenrod is the type plant of the family—the goldenrod which comes to mind when late summer is mentioned, when “all over upland and lowland, the charm of the goldenrod” opens the doorway to autumn.



SOME OTHER GOLDENRODS

Late Summer - Autumn
Woods, roadsides,
swamps

There are some distinct species whose names stand out in the long list of goldenrods. Seventy-five members of the genus are listed in the new, revised *Gray's Manual of Botany* (1950), and a large number of these are to be found in Illinois. They range from deep woods and wooded hills, to the dry, open uplands, the prairie roadsides, the dry oak woods, swamps, and stony fields. There is a goldenrod for almost any situation, and late summer and early autumn see them at their best.

Plant of the unplowed prairie roadsides is the stiff goldenrod (*Solidago rigida*). Its erect, rigid stalks are topped with a flat cluster of brass-yellow, large flowers, much larger than most other goldenrods, with few rays and broad centers. The leaves are small, thick, oval, closely arranged around the stem and growing smaller toward the top of the stalk. It is a compact, unbranching plant of prairie soil which blooms in late August and September.

Quite different in its manner of growth and haunt is the elm-leaved goldenrod (*Solidago ulmifolia*) which grows in dry rocky oak woods in late summer. The plant is tenuous and spreading, with oval, slightly hairy, bright green leaves placed alternately along the thin stem. The flowering stalks are slender and long, each one lined with several rows of flowers. Elm-leaved goldenrod is shown above.



HEATH ASTER (Frost Aster. Frostweed)

Aster pilosus Willd.

September - October
Roadsides, fields

Everywhere over the countryside, over Illinois from one end to the other, from the Wisconsin border to the meeting of the rivers at Cairo, from the Wabash to the Mississippi, and over a large part of the entire continent, from British Columbia and Maine to Texas and Arizona and Georgia, the heath aster in September is in blossom. It is one of the most abundant of all wild asters. The white frost of heath asters whitens almost every country road, borders almost every pond and swamp, frosts the uplands and is a mist of white in the lowlands. It is a simple little white aster with a yellow center and it grows almost everywhere.

The heath aster arranges its small white flowers along secondary stems which branch methodically from the curving main stem. The whole stalk forms a bending garland of white flowers which are lightly set and host to flying insects when the sun is warm. The leaves of heath aster are thin and short and narrow, rather like those of the heath itself, *Erica*, which resemblance gave the aster its common name.

There are many small white asters in autumn: there are so many that they add only confusion to an already confusing plant group. There is the loosely flowered Tradescant's aster (*Aster tradescanti*) named for John Tradescant who had the plant growing in the king's gardens at Lambeth. There is the little wreath aster (*Aster multiflorus*) which has its bending branches thickly set with tiny white flowers half the size of the heath aster but more than twice as abundant. The entire plant is a wreath of flowers and forms grey-white masses along roadsides.



NEW ENGLAND ASTER (Purple Aster)

Aster novae-angliae L.

September -October
Roadsides, ditches

When the deep purple blossoms of New England aster blossom along the roads, then we know that autumn is ripening to that point which calls a halt to new flowers. This is the last and its color is perhaps a deeper hue than any other purple flower since the violets bloomed. Now in September and October, until heavy frosts, the New England asters grace the countryside.

Canada goldenrod and New England aster are the pair which usually are meant by poets and other writers when they speak of the flowers of autumn. There are many asters and many goldenrods but of them all these two are perhaps most gorgeous and most typical of both tribes. In themselves alone, they embody autumn. Here in concise and brilliant form and color, autumn paints the landscape and leads up to the climax of color on the oaks.

New England aster has tall leafy stalks which bend, wandlike, in all directions from the root. The stalks are two to six feet tall, densely downy-hairy, set with short, sessile leaves. Only the upper part of the stalk branches. Up there it sends forth many short, thin stems on which are flowers which may vary in color from rich blue-purple through the red-purples, to pink and white, though the latter is rarest. New England aster has been taken into the gardens and has been developed somewhat to form new and acceptable colors in greater abundance of bloom than even along the roadsides. Yet here beside the autumn road, the bright color of New England asters is incomparable against the background of the waning year.

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CHECK LIST OF SCIENTIFIC NAMES

By Families According to FLORA OF ILLINOIS

By George Neville Jones

2nd. ed. 1950

(Those marked * are illustrated.)

SPARGANIACEAE (Bur-reed Family)

* *Sparganium angustifolium* Engelm. (Bur-reed) page 90.

ALISMACEAE (Water Plantain Family)

* *Sagittaria latifolia* Willd. (Arrowhead) page 197.

CYPERACEAE (Sedge Family)

* *Carex pennsylvanica* Lam. (Spring Sedge) page 3.

ARACEAE (Arum Family)

* *Arisaema triphyllum* (L.) Schott (Jack-in-the-Pulpit) page 70.

* *Arisaema dracontium* (L.) Schott (Green Dragon) page 71.

* *Symplocarpus foetidus* (L.) Nutt. (Skunk Cabbage) page 1.

* *Acorus calamus* L. (Calamus) page 59.

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